PB84-241041

Final Environmental Impact Statement for Metropolitan Wastewater Management Commission Sludge Management Plan Eugene-Springfield, Oregon

Jones and Stokes Associates, Inc.
Sacramento, CA

Prepared for

Environmental Protection Agency, Seattle, WA

Jun 84

U.S. Department of Commerce
National Technical Information Service
NTIS

50272-101

REPORT DOCUMENTATION PAGE

1. REPORT NO. EPA 910/9-84-119

2.

3. Recipient's Accession No. PB84 241041

4. Title and Subtitle Final Environmental Impact Statement Metropolitan Wastewater Management Commission Sludge Management Plan

5. Report Date June 1984

6.

7. Author(s)

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

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10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.

(C)

(G)

12. Sponsoring Organization Name and Address

U.S. Environmental Protection Agency Region 10
1200 6th Avenue
Seattle, WA 98101

13. Type of Report & Period Covered

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

A draft environmental impact statement (EIS) was distributed in October of 1983 to discuss the environmental implications of managing municipal sludge in the Eugene-Springfield, Oregon area. It considered four alternative facilities and process combinations for storing, drying, and reusing sludge, and looked at four locations to house the physical facilities. The plan being proposed by the Metropolitan Wastewater Management Commission (MWMC), which represents Eugene, Springfield, and Lane County, Oregon, includes a 5.5-mile digested sludge conveyance pipeline, mechanical sludge conditioning, facultative sludge lagoon storage, air drying beds, and reuse of the sludge on agricultural land. This final EIS has been prepared to respond to comments on the draft EIS.

17. Document Analysis a. Descriptors

Sludge Disposal
Sludge Management
Sludge Treatment
Land Application
Environmental Impact Statements

b. Identifiers/Open-Ended Terms

Eugene, Oregon
Springfield, Oregon
Lane County, Oregon

c. COSATI Field/Group

18. Availability Statement:

19. Security Class (This Report)

20. Security Class (This Page)

21. No. of Pages 119 171

22. Price

(See ANSI-Z39.18)

See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

84-241041

EPA 910/9-84-118

United States
Environmental Protection
Agency

Water

Region 10
1200 Sixth Avenue
Seattle WA 98101

EPA-10-OR-Eugene/Springfield-Lane-WWTW-84

June, 1984

SEPA

Environmental Impact Statement

Final

Metropolitan Wastewater Management Commission Sludge Management Plan Eugene-Springfield, Oregon

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO
ATTN OF: M/S 443

June 15, 1984

TO: All Interested Agencies, Public Groups and Citizens

Enclosed for your review and comment is the Final Environmental Impact Statement (EIS) for the Metropolitan Wastewater Management Commission (MWMC) Sludge Management Plan, which is a plan to reuse sludge from the Eugene-Springfield, Oregon regional wastewater treatment plant.

This EIS was prepared in compliance with the National Environmental Policy Act and implementing Agency regulations (40 CFR Part 6, November 6, 1979). Availability of the EIS will be announced in the Federal Register on June 15, 1984, which will be the start of a 30-day public comment period. EPA will take no administrative action on this project until the close of the comment period on July 15, 1984. Following close of the comment period, EPA will issue a Record of Decision on the federal grant assistance to be provided for long-term handling of the sludge produced at the regional treatment plant.

Your review of this document will be appreciated. Any comments you may have should be addressed to Norma Young, M/S 443, at the above address.

iw

Final
Environmental Impact Statement
Metropolitan Wastewater Management Commission
Sludge Management Plan
EPA Project No. C-410624

Prepared by:

U. S. Environmental Protection Agency
Region 10
Seattle, Washington 98101

With technical assistance from:

Jones & Stokes Associates, Inc.
2321 P Street
Sacramento, California 95816

Responsible Official:

Ernesta B. Barnes
Regional Administrator

Date: May 3, 1984

Final
Environmental Impact Statement

FACILITY: Municipal Sludge Storage, Conveyance, Treatment, Drying, and Disposal Facilities

LOCATION: Eugene-Springfield, Oregon

DATE: June 1984

SUMMARY OF ACTION: A Draft Environmental Impact Statement (EIS) was distributed in October of 1983 to discuss the environmental implications of managing municipal sludge in the Eugene-Springfield, Oregon area. It considered four alternative facilities and process combinations for storing, drying, and reusing sludge, and looked at four locations to house the physical facilities. The plan being proposed by the Metropolitan Wastewater Management Commission (MWMC), which represents Eugene, Springfield and Lane County, Oregon, includes a 5.5-mile digested sludge conveyance pipeline, mechanical sludge conditioning, facultative sludge lagoon storage, air drying beds, and reuse of the sludge on local agricultural land. This Final EIS has been prepared to respond to comments on the Draft EIS.

FOR FURTHER INFORMATION:

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Overview and Summary

The planning for long-term sludge management facilities in Eugene-Springfield began in 1977 when MWMC contracted with Brown and Caldwell to prepare a sludge management plan for its new regional wastewater treatment plant (RWTP). After several years of considering a variety of sludge management technologies and facilities locations, and receiving considerable public input, MWMC issued a sludge management plan in 1980. Further action on the plan's recommendations was delayed because of the project's low standing on the state priority list. In August of 1982 EPA announced its intention to prepare an EIS on the plan. In response to these delays, MWMC authorized Brown and Caldwell to investigate interim sludge management measures that could be implemented in time to be available when the RWTP begins full-time operation in the fall of 1984. An interim plan was developed and published in December of 1982.

After considerable review of the interim (Phase I) plan, EPA issued a Finding of No Significant Impact (FNSI) on a 5-year sludge management proposal in July of 1983. The environmental evaluation of the long-term (Phase II) proposal continued, and a Draft EIS was released for review at the end of October 1983. The Draft EIS considered a full array of sludge management alternatives for Eugene Springfield (see pages 47-60 in the Draft EIS). The public hearing on the Draft EIS was held in Springfield, Oregon on December 6, 1983. Before EPA can take action on a request for funding for the long-term plan, it must respond to comments on the Draft EIS and discuss the resolution of significant environmental issues. This Final EIS has been prepared to meet those requirements.

EPA's proposed action on the long-term sludge management plan for Eugene-Springfield is to approve the MWMC preferred Alternative 2 at the off-site location Site C, which is an environmentally acceptable solution if certain mitigative actions are incorporated into the project; it is also the most cost-effective alternative. The Draft EIS impact evaluation indicated that Alternative 3 (on-site mechanical dewatering and agricultural reuse) is the environmentally preferred alternative, but EPA has determined that Alternative 2 is an acceptable plan for the following reasons:

1) Alternative 2 is the cost-effective option, with an $8.3 million present worth cost advantage over the on-site sludge handling alternative (Alternative 3); this cost differential cannot be justified since EPA finds that the potential impacts of Alternative 2 can be sufficiently mitigated to make the alternative environmentally acceptable.

2) Alternative 2 provides a significant energy savings over Alternative 3.

3) EPA will require that the Site C storage lagoons be installed with an impervious seal so that full protection of the groundwater is provided.

4) The treated sludge to be stored and dried at Cite C is not considered putrescible or of a nature to be considered a food source for birds or waterfowl; after thorough review, EPA believes Site C facilities should not significantly increase the potential for a bird strike to occur in the vicinity of Mahlon Sweet Field and, therefore, a bird hazard to aircraft would not be generated.

5) The impact analysis contained in the Draft EIS indicates that mitigation measures recommended by EPA are capable of alleviating Alternative 2's potential adverse impacts, including groundwater contamination. In the unlikely event that local water supply wells were to be degraded by the project, however, MWMC would have to accept responsibility for provision of a potable water supply for all affected residents until the contamination is corrected.

Although EPA proposes to approve the MWMC preferred alternative at Site C, it intends to strongly recommend that MWMC delay implementation of Phase II of the Sludge Management Plan until it has investigated the sludge composting program underway in the City of Portland. Composting was considered in the early stages of the MWMC facilities plan development, but Portland has made considerable progress since that time and expects to have its facility on-line in May or June of 1984. Also, there are indications of population decline in the Eugene-Springfield area since 1980; these declines have not been reflected in projections of wastewater and sludge handling needs in MWMC planning documents. The population declines (see Table 1) suggest that the interim sludge handling solution (Phase I) may be adequate to service the area beyond the planned 5-year period. With MWMC on the funding priority list for fiscal year 1985, there is time to reinvestigate this promising sludge management technology. EPA recognizes that there could be financial savings to MWMC by proceeding with the Phase II plan as soon as possible since dewatering costs could be reduced, but EPA believes that the Portland sludge handling plan deserves reevaluation. MWMC has reviewed a reasonable range of other sludge processing technologies.

The October 1983 Draft EIS provides a detailed description of potential impacts associated with the MWMC preferred alternative. The public review of the Draft has indicated that a number of these impacts are of special concern. These include:

o Potential contamination of local drinking water supplies in the vicinity of Site C if sludge components leach

Table 1
Recent Population Trends and Projections in the
Eugene-Springfield Metropolitan Area

	SPRINGFIELD[1]	EUGENE[1]	MWMC SERVICE AREA[2]	METRO. AREA[3]	LANE CO.[4]
1980 (actual)	41,621	105,664	147,245	193,511	275,226
1981 (actual)			147,640		
1983 (actual)	39,925	103,100			
1985 (projected)	46,127	124,206	159,810	221,100	270,867

---

[1] Actual numbers are from the 1980 census and LCOG; projections for 1985 were made by the cities.

[2] Actual numbers are from LCOG; the projected number was developed by EPA using the 2 percent annual growth rate assumed by Brown and Caldwell in its Predesign Report.

[3] Actual number is from 1980 census; the projection was made by LCOG.

[4] Actual number is from 1980 census; the projected number is from the Portland State University Center for Population Research and Census.

through storage lagoons or are carried off-site through surface drainage.

- Potential surface water quality degradation from sludge components carried off of Site C during periods of high groundwater or heavy rain.

- Potential groundwater and surface water contamination at sludge reuse sites if sludge is applied at greater than agronomic rates.

- Conversion of 125 acres of farmland from crop production to storage, treatment, and drying of sludge.

- Possible cropping restrictions in the future on lands receiving sludge, especially if sludge is applied at greater than agronomic rates.

- Change in bird use patterns at Site C, increasing fall and winter use by waterfowl and decreasing year-round use by passerines, with an accompanying change in the potential for bird strikes to aircraft using Mahlon Sweet Field.

- Detectable odors likely to occur within 1,000 feet of sludge lagoons/air drying beds 10-15 days per year.

- Local user cost increase of $8.33 per year in property tax and service fees by 1990.

- Project's consistency with local and state land use planning uncertain due to current state of flux in Lane County Comprehensive Plan and Zoning Code.

- Property values of land adjacent to Site C possibly adversely affected if sludge facilities are not properly operated and maintained.

EPA proposes requiring that MWMC undertake a number of mitigation measures that would control the potentially adverse effects of the project. These include:

- Complete the groundwater monitoring effort that is currently underway at Site C.

- Install an impervious seal/liner in the sludge storage lagoons.

- Contain all surface runoff from sludge drying beds on-site year-round.

- Regularly monitor groundwater on the perimeters of Site C once the Phase II facilities are placed in operation; if local domestic water wells become contaminated from

Site C facilities (this is not anticipated), provide affected residents with an alternative water supply until the contamination is corrected.

- Comply with all DEQ water quality standards and sludge land disposal guidelines, especially as they relate to sludge application rates.

- Maintain a regular groundwater quality monitoring program at representative sludge application sites to detect changes in groundwater quality.

- Develop sludge spill or pipeline leak contingency plan.

- Maintain and utilize sludge lagoon aeration system year-round to control odors; if frequent odor problems develop, implement additional odor control procedures as described in the Draft EIS.

- Continue to coordinate with Lane County regarding General Plan and zoning status of Site C (MWMC received a Conditional Use Permit in February, 1984 for Site C).

The EPA Record of Decision on the Eugene-Springfield Sludge Management Plan, which will be issued after the Final EIS has been circulated for a 30-day public comment period, will contain a final listing of conditions EPA plans to attach to the issuance of a Phase II construction grant to MWMC. This will include mitigation measures for potential adverse environmental impacts.

Public Hearing Summary

On Tuesday, December 6, 1983, EPA conducted a public hearing on the MWMC Sludge Management Plan Draft EIS in Springfield, Oregon. The purpose of the hearing was to solicit local citizen comments on the Draft EIS and the proposed Sludge Management Plan. Approximately 120 persons attended.

Richard Thiel of EPA Region 10 acted as hearing officer and led the attendees through a three-part program. The first part included presentations of the findings in both the Sludge Management Plan and the Draft EIS. Steve Krugel of Brown and Caldwell, the Sludge Management Plan engineers, described the MWMC preferred alternative and its various sludge treatment, storage, and reuse components. Michael Rushton of Jones & Stokes Associates, EPA's EIS consultants, then briefly reviewed the potential environmental impacts of the MWMC preferred plan and compared them to the impacts of alternative plans. This was followed by statements from attendees regarding the content of the Plan and the Draft EIS. Twenty-five persons made formal statements. The third part of the program was a question and answer session, with representatives of EPA, Oregon DEQ, MWMC, Brown and Caldwell, and Jones & Stokes Associates acting as a panel to respond to comments from the audience.

The entire hearing proceedings were recorded by a court reporter and subsequently published in the form of a 147-page hearing record. The hearing was officially in progress from 7:35 p.m. to 12:00 midnight. Due to the extreme length of the hearing record, EPA decided not to publish it in its entirety in the Final EIS. Instead, a brief summary of the major questions and concerns raised during the hearing has been compiled and is presented below. The complete hearing record is on file with EPA Region 10 in Seattle. Any person wishing a copy of the hearing record can remit $29.50 to the U. S. Environmental Protection Agency and request the document from:

Norma Young M/S 443
U. S. Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

Of the 25 persons making official comments on the Draft EIS, the vast majority voiced opposition to use of either Site C or the Coburg Hills Site as a location for long-term sludge storage and drying facilities. One person spoke in support of the MWMC preferred plan. Many of the persons opposing the preferred alternative indicated a preference for another alternative, including the on-site storage and drying option

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(Alternative 3) or an enclosed drying/incineration option (Judco Dryer and O'Connor Incinerator).

The major concern expressed about the use of Site C was the potential for polluting the groundwater underlying the site. The local groundwater is the source of all domestic water for the farms and rural residences in the area and also the City of Junction City, which is downgradient from the site. Questions were asked regarding the nutrient, heavy metal, bacterial, and viral content of the sludge and the effectiveness of design measures at keeping these materials out of surface runoff or the groundwater near Site C. The effectiveness of groundwater monitoring and the ability to clean up the groundwater if it did become contaminated was also questioned. Many of those who commented about the use of Site C or the Prairie Road Site are residents and/or farmers in that area.

Approximately seven people from the Coburg area commented on the Draft EIS, and all expressed opposition to locating a sludge storage and drying facility in that area. This included the President of the City Council, the water commissioner, and an attorney representing the City, the City Council, the Chamber of Commerce, and the Muddy Creek Irrigation District. Several persons questioned why the Coburg site was analyzed in the Draft EIS when it had been reviewed and subsequently dropped from consideration in developing the Sludge Management Plan. The other concerns expressed about the use of this site included aesthetic impact, groundwater contamination, site flooding, odors, economic impact, and adverse influence on local property values. Several persons also felt that the cities of Eugene and Springfield should not be considering placement of an urban-type land use outside the metropolitan area urban growth boundary in a rural setting. Conflicts with state land use planning goals (agricultural lands, public facility, urbanization, and energy conservation) were claimed.

In addition to the statements opposing the MWMC preferred alternative and the use of an off-site location for sludge storage and drying, a large number of specific questions or comments were made regarding the content of the Draft EIS. A listing of the more significant and/or commonly raised concerns is presented below:

- The latest research on the fate of bacterial and viral wastewater contaminants should be considered when assessing the public health impact of land disposal of sludge.

- The Draft EIS failed to adequately describe why off-site locations other than Prairie Road, Coburg Hills, and Site C were not considered in the impact analysis.

- The range of alternative sludge disposal technologies considered in the Draft EIS should have been greater.

- The agricultural reuse market for municipal sludge is not adequately documented in the Draft EIS.

- Air-drying of sludge in the Eugene area does not seem possible; other methods of drying should be considered. Sludge incineration should also be considered more fully.

- Much of the groundwater data used in the Draft EIS is inaccurate, especially the data from the Sweet, Edwards & Associates River Road/Santa Clara study.

- It will be impossible to avoid sandy or gravelly subsoil lenses when excavating ponds at Site C or Prairie Road.

- The cities of Eugene and Springfield should handle their sludge management needs within their own urban growth boundaries.

- How can MWMC consider using Site C or Prairie Road for long-term sludge storage and drying when local residents are not allowed to put additional septic tank/leachfield systems on their property?

- Why is it more expensive to dewater sludge at the regional wastewater treatment plant site than at an off-site location?

- The Site C storage lagoons will attract birds and create a hazard to air traffic using Mahlon Sweet Field.

- The Delta Gravel Pits should be considered as a sludge disposal site.

- Site C's value as industrial property should be considered before it is used for sludge processing.

- Valuable farmland should not be removed from production for sludge processing purposes.

- Seasonal flooding on Site C and Prairie Road should eliminate their consideration for sludge processing.

- What course of action would be taken if groundwater monitoring at Site C shows contamination is occurring?

- What are the land costs at Site C?

Response to Comments

Introduction

EPA received 32 written comments and recorded oral testimony from 28 persons during the official public review period for the MWMC Sludge Management Plan Draft EIS. Materials were also received regarding the Agripac wastewater spray irrigation project and the Eugene RWTP project; these were not considered relevant to a review of the Draft EIS. Some of this material was submitted to EPA before the Draft EIS was published and therefore does not specifically address itself to the content of the Draft EIS. This material has been reviewed by EPA and is retained in the project files in Seattle.

A log of all written and oral comments received during the official 45-day comment period is presented on the following pages. The name of the agency or individual that commented is presented, and the subject matter of the relevant comments has been indicated by placing an "X" in the appropriate column. Responses to the comments have been organized into a number of subject matter categories, as indicated in the log of comments, because of the duplicative nature of many of the comments. Each individual comment has been carefully reviewed and subsequently addressed in the text of the general comment sections that follow. For example, if a commentor voiced a groundwater concern regarding the proposed project, that person may review the Groundwater section to find a response. All written comments received on the Draft EIS are included as Appendix A to this Final EIS. Oral comments that received responses during the question-and-answer part of the public hearing are not addressed again in this document.

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Table 2. Log of Comments
MWMC Sludge Management Plan Draft EIS

WRITTEN COMMENTS	DATE RECD.	GROUNDWATER	BIRD STRIKE HAZARD	SURFACE WATER/FLOODING	SOILS/FARMLAND	AGRICULTURAL REUSE	PUBLIC HEALTH	ODORS	ENERGY	SLUDGE QUALITY/ TREATMENT	PROJECT COSTS	ALTERNATIVE TECHNOLOGIES/SITES	LANDFILL DISPOSAL	LOCATION OF FACILITIES	COBURG HILLS SITE	LAND USE	PROJECT DESIGN	ERRATA	OTHER COMMENTS
U. S. Dept. of the Army Corps of Engineers, Portland Dist.	12/23/83																		
U. S. Dept. of Housing and Urban Development	12/9/83	X																X	
U. S. Dept. of the Interior, Office of Secretary	2/3/84	X																	
U. S. Dept. of Transportation, Federal Aviation Administration	12/19/83		X																
U. S. Dept. of Transportation, Urban Mass Transit Admin.	11/3/83																		
Oregon Dept. of Fish & Wildlife	12/5/83																	X	
Oregon State Executive Dept.	2/24/84																		
Oregon State Historic Preservation Office	2/24/84														X				
Lane Council of Governments	12/21/83	X		X	X														

Table 2. Log of Comments
MWMC Sludge Management Plan Draft EIS

WRITTEN COMMENTS	DATE RECD.	GROUNDWATER	BIRD STRIKE HAZARD	SURFACE WATER/FLOODING	SOILS/FARMLAND	AGRICULTURAL REUSE	PUBLIC HEALTH	ODORS	ENERGY	SLUDGE QUALITY/ TREATMENT	PROJECT COSTS	ALTERNATIVE TECHNOLOGIES/SITES	LANDFILL DIPOSAL	LOCATION OF FACILITIES	COBURG HILLS SITE	LAND USE	PROJECT DESIGN	ERRATA	OTHER COMMENTS
Metropolitan Wastewater Management Commission	12/18/83												X	X					
Springfield Area Chamber of Commerce	12/21/83																		
Melva Barnes	12/19/83	X	X			X	X			X	X	X		X			X		X
Brown and Caldwell	12/21/83	X			X	X	X		X			X			X			X	X
J. Kyle Clinkscales	12/8/83	X	X					X											
Mr. and Mrs. William Cook	12/13/83						X					X							
Robert Dooley	10/29/83													X					
Gordon Elliott	12/21/83											X							
Joyce Engels	12/15/83							X											
Larry Engels	12/19/83														X				
Ernest Garrett	11/6/83													X					
Howard Humphrey	12/10/83	X	X			X	X					X	X						
Donovan Kendall	12/6/83			X	X														

Table 2. Log of Comments
MWMC Sludge Management Plan Draft EIS

	DATE RECD.	GROUNDWATER	BIRD STRIKE HAZARD	SURFACE WATER/FLOODING	SOILS/FARMLAND	AGRICULTURAL REUSE	PUBLIC HEALTH	ODORS	ENERGY	SLUDGE QUALITY/ TREATMENT	PROJECT COSTS	ALTERNATIVE TECHNOLOGIES/SITES	LANDFILL DISPOSAL	LOCATION OF FACILITIES	COBURG HILLS SITE	LAND USE	PROJECT DESIGN	ERRATA	OTHER COMMENTS
WRITTEN COMMENTS																			
Dan & Ann Klemp	12/21/83	X						X											
Lois Lund	12/16/83	X									X								
Richard & Sadie Lyon	12/8/83	X																	
Nathaniel D. Mase	12/16/83																		
Jim Melamed	12/6/83					X						X			X	X			
Bob Meltebeke	1/9/84														X				
Lucille Moyer	12/21/83	X																	
John Neely, Jr.	11/7-12/19/83	X			X		X			X	X						X		
Harold & Lois Schrenk	12/9/83	X					X	X											X
Chester Swenson	12/83/83				X						X								
ORAL COMMENTS AT PUBLIC HEARING (12/6/83)																			
Fred Simmons		X		X				X											
Jere Christner																			X
Jim Melamed						X						X			X	X			
Bob Bryson															X				

Table 2. Log of Comments
MWMC Sludge Management Plan Draft EIS

ORAL COMMENTS	DATE RECD.	GROUNDWATER	BIRD STRIKE HAZARD	SURFACE WATER/FLOODING	SOILS/FARMLAND	AGRICULTURAL REUSE	PUBLIC HEALTH	ODORS	ENERGY	SLUDGE QUALITY/ TREATMENT	PROJECT COSTS	ALTERNATIVE TECHNOLOGIES/SITES	LANDFILL DISPOSAL	LOCATION OF FACILITIES	COBURG HILLS SITE	LAND USE	PROJECT DESIGN	ERRATA	OTHER COMMENTS
Donald Dickey		X						X			X								
John Buttner		X										X							
John Mehringer		X		X								X						X	
Wanda Simmons		X			X		X	X											
Marie Gray		X																	
Bob Kaiser															X				
Bob Nelson		X																	
Tom Heintz												X							
Chris Coglietti															X				
Herman Bodenroeder																			X
Pat Bohanan		X				X					X	X				X			
Warren Jacquenod		X	X																
Katherine Bowder		X																	

Table 2. Log of Comments
MWMC Sludge Management Plan Draft EIS

ORAL COMMENTS	DATE RECD.	GROUNDWATER	BIRD STRIKE HAZARD	SURFACE WATER/FLOODING	SOILS/FARMLAND	AGRICULTURAL REUSE	PUBLIC HEALTH	ODORS	ENERGY	SLUDGE QUALITY/ TREATMENT	PROJECT COSTS	ALTERNATIVE TECHNOLOGIES/SITES	LANDFILL DISPOSAL	LOCATION OF FACILITIES	COBURG HILLS SITE	LAND USE	PROJECT DESIGN	ERRATA	OTHER COMMENTS
Melva Barnes		X	X					X									X		
Gordon Elliott												X							
Judy Wullenwaber		X			X														
John Neely, Jr.												X							
Ernest Garrett		X														X			
Bob Parker		X						X			X								
James Anderson												X							
Laura Heintz		X			X							X							
William Connor											X			X					
Marlin Franssen								X											
Kirk Roth											X	X							

Groundwater

The groundwater quality issue was by far the most common subject of comment on the Draft EIS. Thirteen letters of comment and fourteen oral presentations specifically addressed the impact of the MWMC project on groundwater quality. The most prevalent concern was that storage and air-drying of sludge at Site C or the Prairie Road Site might contaminate local wells, which provide the sole domestic water source for area residents. Others indicated that the sludge transport pipeline and the land application of sludge were likely sources of groundwater contamination. Several questions were raised about the assumptions made in the EIS groundwater analysis, and the validity of some of the data used in that analysis was questioned. Another major topic of comment was the range and effectiveness of groundwater contamination control measures planned as part of the project. A variety of other specific, less easily categorized questions were raised about groundwater in the vicinity of the proposed project.

The response to this diversity of groundwater comments has been organized into three sections. The first addresses all questions about the technical detail of the Draft EIS groundwater analysis. Description of existing groundwater conditions is the major topic of this section. The second section addresses questions about the design of the sludge handling facilities and their effectiveness in controlling groundwater contamination. The final section addresses a number of miscellaneous questions.

The groundwater quality analysis in the Draft EIS was lengthy; it summarized a considerable volume of data and analyzed groundwater conditions at a large number of sites. The sources of background data for this analysis are existing reports and monitoring data. No original data collection was undertaken by EIS preparers, but efforts were made to use the most recent, most site-specific data available. Sweet, Edwards & Associates (1982) data from the Agripac site were used in reference to Site C and Prairie Road because it is both recent and site-specific. EPA has not received any substantive evidence that this data is inaccurate or invalid. If there is specific reason to question this data, EPA would appreciate being informed of what is inaccurate or misleading. In several instances, background data that are 10 to 15 years old were used (Frank and Johnson 1970; Frank 1973). This was considered appropriate where more recent or more specific data is not found in the literature. Most of the older literature provided only general groundwater flow direction data. It is unlikely that this has changed significantly in recent years. The groundwater flow rate at Site C has not been measured by MWMC; the EIS preparers, therefore, relied on data developed by Sweet, Edwards & Associates for a nearby section of the aquifer.

A question was asked regarding the migration of leachate out of the sludge lagoons if some failure occurred during periods of high groundwater. The EIS contention that leaching would "virtually cease" in the fall and winter due to a rise in the water table was questioned. The commentor felt that mounding would occur and horizontal leachate migration would continue. We agree that leachate migration probably would not totally cease. Migration would be greatly reduced, however, if the general groundwater level reached the bottom of the lagoons or the surrounding ground surface level. Mounding could occur if the groundwater level remained some distance below the bottom of the lagoons. In this situation, some lateral movement of leachate could be expected. The significance of lateral migration would depend on the volume and quality of the leachate and its rate of movement and mixing. Off-site effects probably would be detected sooner in the mounded groundwater situation than if the underlying groundwater level was at or near the surface.

Several commentors asked about the depth of the clay soils at Site C. Concern was expressed that excavation for the sludge lagoons might intercept coarser sand or gravel, increasing the risk of eventual groundwater contamination. As indicated in the Draft EIS (page 84), there may be locations where the depth of clay soil is less than 5 feet and coarser material may be encountered. The project engineers planned to cover such areas with a minimum of 6 inches of compacted clay material excavated from some other location. EPA is requiring that an impervious seal be installed in all lagoons to ensure that leachate migration is controlled even if coarse subsoil layers are encountered during excavation. Soil borings made in the Site C area to date indicate that clay soils extend from 4 to 18 feet below the surface, with gravelly silty sand found at the surface in one well boring (Geotechnical Consultants, Inc. pers. comm.).

Many of the groundwater comments indicated a fear that contamination would occur in spite of features that would be designed into the proposed project to protect groundwater quality. Two persons felt that the ponding of surface water that often occurs in the area in winter months would lead to groundwater contamination if the sludge facilities were located in this area. The project design, however, calls for construction of 5-foot high berms around all sludge lagoons, and air-drying beds would not be used in the winter months. Ponded or flowing surface water, therefore, should not come into contact with sludge.

EPA is aware of fears that a 6-inch clay liner in all sludge lagoons might not be sufficient to avoid eventual groundwater contamination. Because there is a significant number of persons that rely on shallow groundwater for domestic consumption in the Site C area and coarse subsoil layers may be encountered in lagoon construction, EPA is requiring MWMC to install an impervious seal in the lagoons. This should provide maximum groundwater protection. MWMC has estimated the additional cost of a plastic liner would be approximately $960,000 (see Appendix B). Other types of liner or seal may be possible.

The dual force mains that would carry sludge and supernatant between the RWTP and the off-site facilities were also sources of concern. In its comments, Brown and Caldwell noted that the dual nature of this line could reduce the likelihood of serious groundwater contamination. If a leak (or break) was detected in one line, the second line could be used for transport of materials while the damage in the other line was repaired. Problems of exfiltration from unsealed joints or vibration damage can be controlled through proper design and construction; these problems can be located, if they do occur, through periodic pressure testing. It will be MWMC's responsibility to ensure that pipelines are properly designed and constructed.

Several persons questioned the need for groundwater quality monitoring in the vicinity of Site C if the project was not expected to contaminate the groundwater. Others asked what would happen if monitoring detected some contamination. Groundwater monitoring is an essential part of plans for sludge reuse in the Eugene-Springfield area; it will serve a number of valuable functions. First, a monitoring system will provide background water quality data, whether it be at the storage and drying site, at Short Mountain Landfill, or at sludge reuse sites. If all facilities and operations perform as expected, the monitoring data will act as an indicator that groundwater contamination is not occurring. If for any reason, however, the sludge management operation does cause a change in groundwater quality, the monitoring program will allow early detection. Modification of facilities or changes in operational procedures can then be undertaken to control the source of the contamination. The nature of these changes would depend upon what is found to be the source of contamination.

The nature of the aquifers at Site C make it unlikely that groundwater contamination in the area would be corrected by extracting and treating the water. An extraction barrier might be created, but rapid location and correction of the source of contamination would be the critical action. If local domestic water supply wells were to become contaminated, MWMC would be responsible for procuring an alternative water supply for the affected residents until the contamination had been corrected. Control of the source of contamination and dilution of the contaminants in the groundwater as they move with the general groundwater flow may be the only effective remedial action. The same general remedial procedure would apply at Short Mountain Landfill if a change in groundwater quality were detected.

Groundwater monitoring at sludge reuse sites would serve the same function as at the storage and drying site. Any change in groundwater quality caused by sludge reuse would be detected and a change in application would be initiated. If the source of the problem was an excessive rate of application, an adjustment in rates could be made. If the problem was found to be associated with site drainage or permeability conditions, or excessively low soil pH, it might be necessary to halt sludge reuse at that particular site.

In summary, there are numerous features designed into MWMCs preferred sludge management plan to reduce the chances of adversely affecting groundwater. Every effort will be made to guarantee that all of the features are constructed and operated as designed. The groundwater monitoring system will provide back-up protection. EPA will not require MWMC to post a bond for correction of water supply contamination, but MWMC will have the responsibility for correcting problems associated with its sludge management facilities.

The final section of this groundwater discussion deals with several specific questions that could not be answered in a collective response. These questions and their responses are presented below.

Why has MWMC not considered use of government land south of Fern Ridge Reservoir for sludge reuse? The land is not over the aquifer supplying domestic wells. MWMC intends to apply its sludge to agricultural lands to take advantage of its nutrient value. If the government land south of Fern Ridge Reservoir is used for agriculture and can meet DEQ land application criteria, MWMC would consider its use.

Why are the Delta Pits unacceptable for sludge storage, yet Site C is acceptable even though gravelly subsoils may be encountered? The reasons for rejecting use of the Delta Pits is stated on pages 56-57 of the Draft EIS. Lagoons at Site C would not be placed on a large expanse of open gravel as would be the case at the Delta Pits. Only small lenses are expected to be encountered at Site C. The lagoons would be lined with impervious material.

What is the depth to groundwater at Site C at this time? Groundwater monitoring at Site C shows that depth to groundwater has fluctuated between less than one foot to 11 feet below the surface in the last year (Peroutka pers. comm.).

Would agitation action from train-related vibrations cause groundwater to intermix with sludge lagoon leachate at Site C or Prairie Road? The sludge lagoons are not expected to generate leachate, as an impervious seal is being required by EPA. With an impervious liner, train-related vibrations are not expected to have any effect on leakage or groundwater.

The EIS contention on page 84 that ammonia-nitrogen moves freely through the soil is inaccurate. It is readily bound up with soil. EPA agrees that the statement on page 84 is inaccurate. Reference should have been to nitrate rather than ammonia-nitrogen.

A North Carolina study indicates that sludge should not be applied to soils with a pH less than 6.5. Low pH allows heavy metals and other materials to move rapidly through the soil. The Oregon DEQ recognizes soil pH is a significant factor in the movement of heavy metals through soils. Its sludge reuse guidelines have accounted for this by allowing lower cumulative application rates where pH is less than 6.5 (see page F-20 of the Draft EIS). DEQ has reviewed the literature on this subject, and does not feel that sludge reuse should be totally eliminated on soils with a pH less than 6.5.

Bird Strike Hazard

Several commentors voiced continued concern over the hazard that the project might create if it becomes a bird attractant. This included local residents and the Federal Aviation Administration. The principal issues raised in these comments were addressed in the Draft EIS on pages 140-157, but will be restated here briefly.

The concern over the bird strike hazard is based on FAA Order 5200.5, which discourages the location of any solid waste disposal facility that might act as a bird attractant within 10,000 feet of airport runways used by turbo-jet aircraft. EPA has adopted a similar policy regarding the processing or disposal of putrescible wastes within 10,000 feet of a runway. Residents have stated that the planned sludge storage lagoons and sludge drying beds, which are located less than 10,000 feet from Mahlon Sweet Field Runway 3-21, are likely to act as a bird attractant and therefore are in conflict with FAA and EPA policy.

EPA researched this issue thoroughly in preparing the Draft EIS. Persons with considerable knowledge of local bird use patterns, bird use at similar sludge facilities, and bird strike hazards at airports were consulted. This included FAA representatives in Seattle, Minneapolis, and Washington, D. C., and treatment plant operators in Corvallis and Sacramento. The two critical questions addressed in assessing the hazard were: 1) would the new facilities act as a bird attractant, and 2) would any project-related change in bird use constitute an increased risk of bird strikes to aircraft using Mahlon Sweet Field?

After reviewing all aspects of facility design and the relationship of Site C to the Runway 3-21 flight pattern, several important factors came to light. First, the sludge to be stored and dried at Site C would be digested and essentially stabilized before arriving at the site. The material will not be putrescible (containing organic matter capable of being decomposed by microorganisms) and, therefore, should not act as a food source to birds. Further, operation of the facility, including use of aerators and control of aquatic vegetation within the lagoons, should further discourage bird use of the site. Finally, aircraft using Runway 3-21 would pass approximately 400-600 feet overhead of Site C, considerably above the normal flight elevation of most birds presently known to inhabit the area (waterfowl are an exception).

Based on this review of information, we concluded that the sludge facilities would not act as a significant attractant to birds, although waterfowl may occasionally use the lagoons for resting. There are already numerous open water areas in the vicinity that provide resting areas and also a source of food for waterfowl, and it is unlikely that waterfowl would use "poor" quality water (sludge) for resting, given abundant alternatives. The project-related change in local bird use patterns is not expected to significantly increase the probability of a bird strike occurring in the vicinity of Mahlon Sweet Field.

In order to ensure that any facilities located at Site C would not act as a bird attractant, EPA has recommended a number of control measures. These include control of aquatic vegetation in the lagoons, day-time use of aerators and monitoring of bird use patterns. In the unforeseen event that birds may be attracted to the lagoons and create a bona fide hazard, it will be MWMC's responsibility to mitigate the problem.

Surface Water/Flooding

Surface water quality and site flooding concerns were indicated in a number of comments. The chief concern was that runoff from or flooding at Site C would contaminate surface water or groundwater to the north. Reference to Federal Emergency Management Agency (FEMA) flood hazard boundary maps was made by two individuals. The February 1981 flood hazard maps show a Zone A flood zone along the drainage that traverses the portion of Site C analyzed as part of Alternative 1. It does not cross the southern portion of Site C analyzed as the MWMC preferred alternative (Alternative 2).

Lane County was contacted to determine if more recent flood hazard maps showed any change in the boundaries of flood hazard at Site C or Prairie Road. FEMA maps of Lane County published on September 16, 1983, indicate that the drainage channel that traverses Site C (the northern portion) from southeast to northwest is still classified as a Zone A flood hazard area. This suggests that if MWMC wishes to use this northern portion of Site C for sludge handling facilities, the drainage channel must be diverted around the facilities. EPA would require that the facilities be flood-proofed for the 100-year flood event. This would be required as a condition of construction grant approval.

The possibility of surface water contamination at Site C has been taken into consideration in the proposed design and operation of the lagoons and drying beds. Runoff and flooding control measures are discussed on pages 111-113 of the Draft EIS. Rerouting of the surface drainage around Site C, collection of runoff from those areas likely to come in contact with sludge, and fall washdown of sludge drying beds are several of the project features planned to control surface water contamination. If off-site drainage from the lagoons, drying beds, and sludge transfer facilities are contained on-site as planned and pumped back into the lagoons, and if the existing drainage channel is diverted around Site C, surface water contamination should not occur downstream from the site.

The Lane Council of Governments expressed concern that there is a lack of water quality data for the surface waters near Site C, the Prairie Road Site, and the Coburg Hills Site. This lack of data is typical when the local surface waters are intermittent streams. Very few intermittent streams are monitored throughout the United States. It is likely that agricultural runoff now contributes nutrients, bacteria, and perhaps pesticide or herbicide residues to these waters when they are flowing. If Site C is developed for sludge storage and drying, a surface water sampling program must be initiated prior to construction. These data will be essential as a background comparison for future monitoring results. The lack of data on existing surface water quality conditions, however, need not influence the decision on whether or not to proceed with construction of off-site sludge handling facilities.

Soils and Farmland

Five persons indicated their opposition to the conversion of prime farmland for construction of off-site sludge storage and drying facilities. In contrast, the Sludge Management Plan engineers (Brown and Caldwell) indicated that the land at Site C should not be considered prime farmland because of the complex patterns of Class II and Class IV soils that exist on the site and the poor drainage conditions present on the site. Brown and Caldwell contends these conditions limit the use of the entire site as prime farmland.

It is EPA's policy to consider protection of the nation's significant agricultural lands from irreversible conversion to nonagricultural uses. In the case of Site C, the land has not been categorized as prime or unique farmland under the U. S. Soil Conservation Service Land Inventorying and Monitoring Memorandum (LIM) criteria. Lane County, however, has mapped the site as a combination of prime and unique farmland. EPA recognizes that poor drainage conditions on the site and the alternating pattern of well drained and poorly drained soil restrict the range of farming practices that are undertaken on the property. The site is currently used for grass seed production rather than a food crop. Nonetheless, EPA feels that the loss of 80-100 acres of Class II soil at Site C is an adverse impact of the MWMC preferred project, although it is not an irreversible and irretrievable loss. The significance of this loss of soil resources has been weighed against the environmental and economic implications of other sludge management alternatives. If MWMC pursues grant funds for use of Site C, EPA will fund purchase of only that acreage needed to accommodate the 20-year design capacity of the facilities. EPA will also recommend that the facilities be located on the site in a manner that least interferes with continued agricultural use of surrounding parcels.

Agricultural Reuse of Sludge

A major component of the MWMC Sludge Management Plan is the reuse of liquid and air-dried sludge on Willamette Valley agricultural lands. A demonstration reuse program has been underway for several years now, using sludge from the Eugene wastewater treatment plant. Estimates prepared by Brown and Caldwell indicate that up to 2,050 acres of agricultural land will be needed by the year 2000 to reuse all sludge generated by the new Eugene RWTP. A number of persons commenting on the Draft EIS felt that there was insufficient evidence of the local farmers' willingness to accept the sludge.

A number of reasons why local farmers might not be willing to accept the sludge were expressed. This included such concerns as heavy metal accumulation, low nutrient content, future restrictions on crop types, competition for land from urban uses, potential for changes in regulations, and general mistrust of local city government. Several persons requested proof of a demand for the product, including a list of names and numbers of acres committed to accepting the sludge.

EPA has had considerable experience with municipal sludge reuse proposals throughout the U. S., including projects in the Northwest. This experience shows that there is usually an initial hesitancy toward sludge reuse, but in the majority of cases agricultural reuse programs have proven successful in the long term. There is a wide array of control measures available to protect soil resources and the public health from ill effects of agricultural reuse of sludge. The MWMC has initiated a pretreatment program to limit the amount of potentially harmful materials that enter the RWTP. DEQ and MWMC regulations and guidelines restrict the amount of heavy metals that may be applied to a given parcel of land. The sludge may not be applied to land being used to raise food crops. Therefore, no land will be taken out of food crop production. Other guidelines restrict public access and grazing activity on land receiving sludge. A comprehensive soil monitoring program is also required.

EPA has not required MWMC to provide a listing of individuals or specific acreages that would receive the sludge product. Experience with other projects and an independent review of the agricultural reuse market in the Eugene area (see pages G-6 to G-11 in the Draft EIS) indicate that the sludge should have sufficient value as fertilizer and soil conditioner to attract users, as long as the reuse is closely monitored by both DEQ and MWMC. EPA also feels that subsidiary markets in forestry and speciality fields (nurseries, landscapers) could be acceptable outlets for sludge in the Eugene area. EPA does not believe that there will be a lack of reuse opportunities after the storage and drying facilities are constructed.

Several other questions were raised regarding the agricultural reuse of sludge. One person asked if the reuse aspect of the plan would make MWMC eligible for an additional 10 percent federal funding as an innovative or alternative technology. As an alternative technology, the sludge reuse aspect of the project makes MWMC eligible for an additional 10 percent grant funding. However, this extra 10 percent is subject to the availability of federal funds.

Two persons questioned the public health consequences of agricultural reuse and wondered why the sludge could be applied to agricultural land but not to urbanized settings such as parks and greenbelts. There is sufficient evidence in the scientific literature to indicate that the controlled application of treated municipal sludge to nonfood crop agricultural land can be accomplished without significant risk to public health. Agricultural lands are typically not subject to general public entry, and access can be closely controlled. Farmers will receive sludge on a voluntary basis only, after being informed of any potential health risks. This controlled access and implied consent cannot be achieved where the sludge is placed on public parks or greenbelts. Sludge is being applied to agricultural land in many parts of the United States without apparent adverse health effects.

Brown and Caldwell questioned the conclusion in the EIS that use of air-dried sludge on agricultural lands (Alternative 2) would create more significant heavy metals problems in surface waters than would use of dewatered sludge (Alternative 3). EPA bases its contention on the fact that the total amount of heavy metals applied per acre would be less annually using dewatered sludge than using air-dried sludge. This is because the ratio of heavy metals to nitrogen is lower in a sludge that has not been subjected to thorough air-drying. Soils should be able to absorb the smaller amounts of heavy metals more rapidly under the dewatering mode, thus reducing the risk that the metals could be washed into surface waters before being assimilated into the soil.

Public Health

The public health risks associated with sludge processing and disposal have been a dominant issue in the MWMC sludge management planning effort. The comments received during the Draft EIS review process focused on a continuing concern--the health hazard associated with applying sludge to agricultural lands. Several commentors specifically identified the cadmium content of the sludge as a health hazard. Others felt that viruses, bacteria, and heavy metals in general pose a threat to human health and should be kept off the land. Transfer of toxic materials to humans through consumption of plants or animals raised on the land was also expressed as a public health concern.

Both EPA and the Oregon DEQ are aware of the potential health hazards associated with agricultural reuse of sludge. In order to provide for maximum public protection while still taking advantage of the fertilizer and soil conditioning value of municipal sludge, EPA and DEQ have established rigid controls on agricultural reuse. These controls have been established through review and analysis of the numerous public health studies that have been conducted by universities and state and federal agencies. The public health analysis contained in the Draft EIS (pages 124-136) was prepared after review of the most recent public health literature and was compiled by a specialist in bacteriology and public health. After considering the degree of treatment the sludge will receive, the expected quality of the sludge, and the high degree of control and monitoring of agricultural reuse required by DEQ, EPA concludes that the sludge can be applied to the land in the Eugene-Springfield area without creating a significant public health threat.

Bacterial and viral levels in the sludge will be greatly reduced by the digestion, storage, and air-drying processes proposed for use. Heavy metal content, which is relatively low in Eugene-Springfield sludge, will be closely monitored and limits will be established for each land area receiving sludge. Sludge will not be applied to food crops, so plant uptake will not be a public health risk. The heavy metal limits, including limits for cadmium, will provide a 100-1,000 fold safety factor for any given year. It will take an estimated 65-167 years to reach the maximum allowable heavy metal loading on reuse sites, assuming maximum allowable applications of sludge. If cadmium levels are found to be twice as high as expected by Brown and Caldwell, this life expectancy could be reduced to 32 or 33 years. In any event, soil monitoring will ensure that heavy metals are not allowed to build up to hazardous levels on any sludge disposal site.

Two persons indicated that studies have shown septic tank treatment of human wastes poses less of a public health threat than activated sludge treatment in a central wastewater treatment facility. There are numerous studies that indicate septic tank/leach field systems are effective wastewater treatment systems when soil and groundwater conditions are appropriate, but these systems cannot be used effectively in densely populated areas. Sludges generated in activated sludge wastewater treatment plants can be disposed of or reused without a serious health risk if properly digested and treated prior to disposal or reuse. Septic tank/leach field systems are not a viable alternative to MWMC's proposed Sludge Management Plan.

Several persons also expressed the fear that toxics in the sludge applied to agricultural land would be taken up by plants and subsequently pose a health hazard to humans. As stated earlier, DEQ regulations (adopted by MWMC) do not allow application of sludge to food crops. An 18-month waiting period must be observed between sludge application and planting of food crops. This is expected to provide sufficient time for any pathogenic agents to die off; soil and plant tissue samples can be taken to ensure that hazardous levels of potentially toxic materials are not transferred to crops that may be consumed by humans. It is unlikely, also, that lands receiving sludge in the Eugene-Springfield area will switch from growing nonfood chain crops to growing food chain crops.

One commentor questioned the statement in the Draft EIS that composted sludge would have a lower level of pathogens than air-dried, dewatered, or liquid sludge. EPA agrees that pathogen die-off in facultative sludge lagoons can approach that achieved through composting, given an adequate retention time in the lagoon.

Odors

A concern about odor problems in the Site C/Prairie Road area was expressed by seven commentors. No specific questions or comments were made about the odor analysis in the EIS, but the commentors felt that odors would significantly affect persons living near the facilities. One commentor felt that odor problems would occur more frequently than indicated in the Draft EIS.

EPA agrees that odors are likely to occur at times in the vicinity of the sludge lagoons and drying beds. The frequency of these problems will depend in part upon the frequency of inversions, the distance from the facilities, and the effectiveness of operating techniques designed to minimize odor generation. It is impossible to predict the absolute frequency and significance of odor problems. This is one reason for selecting a rural setting for the facilities. EPA has recommended a number of actions that could be taken by MWMC if significant odor problems develop in the vicinity of the off-site facilities (see pages 179-181 of the Draft EIS and page 5 of this document).

Energy

Brown and Caldwell indicated that the energy analysis in the Draft EIS did not consider several secondary energy demands associated with mechanical dewatering alternatives (Alternative 3 and, to a lesser degree, Alternative 2). These energy demands include polymer production and recycle treatment of the liquid removed from sludge. The energy saved by replacing commercial fertilizers with sludge was also not considered in the Draft EIS.

These secondary energy use factors are legitimate elements of the EIS analysis. While specific numbers have not been generated here, the energy demands for Alternative 3 would be even greater in relation to Alternatives 1 and 2 than is shown in Table 3-14 of the Draft EIS (page 169) if the polymer production and recycle treatment energy demands were considered. Alternatives 1 and 2 would also show a greater energy use advantage over Alternative 3 if the energy value of fertilizers were considered. The consideration of these secondary energy factors reinforces EPA's contention that Alternative 3 has a very distinct energy consumption disadvantage when compared to Alternatives 1 and 2 (see the Overview and Summary section at the beginning of the Final EIS).

Sludge Quality and Treatment

The sludge quality and sludge treatment processes assumed in preparing the Draft EIS were questioned in two letters. Several specific questions were asked about the levels of cadmium, PCBs, mercury, and other potentially hazardous substances that would be in the sludge when it reached off-site storage lagoons. The question was also raised as to whether the sludge should be considered putrescible or nonputrescible when it reaches the off-site facilities.

The most detailed analysis of sludge constituents in the Eugene-Springfield systems was conducted by MWMC in April through August of 1978. The results of this analysis are reported in Tables B-1 and B-2 of the Draft EIS (pages B-3 and B-4). These numbers are expected to be indicative of the quality of sludge that will be produced at the new RWTP, although some variation will occur due to changes over time in influent concentrations and the change in wastewater and sludge treatment processes. The MWMC pretreatment program has been approved and will cause some reduction to occur in certain sludge constituents. This includes metals and salts. Much of the metals and salts that, in the past, were discharged to the sewer system by industrial sources, will be removed at the site of use prior to discharge to the sewer system. These materials will, in turn, have to be recycled, treated on-site, or transported to an acceptable land disposal site. This could include Short Mountain Landfill if the materials are not considered hazardous. If the materials are considered a hazardous waste, they must be transferred to the hazardous waste disposal facility at Arlington, Oregon. The exact nature of the sludge produced by the new RWTP will not be known until it is in operation. Extensive sludge testing will occur once the plant is on-line. The sludge may continue to contain small amounts of heavy metals (cadmium, mercury, lead, zinc) and some chlorinated hydrocarbons from uncontrolled disposal of materials through residential sewer hookups. No radioactive materials are expected in the sludge.

Two persons questioned whether the sludge stored in off-site lagoons should be classified as putrescible. A review of the proposed sludge digestion and lagoon storage processes and consultation with EPA personnel in Cincinnati, Ohio indicate the sludge to be spread on drying beds at Site C or any off-site location would be nonputrescible. The materials stored in the facultative sludge lagoons may be in part putrescible, but would be covered by several feet of clear water and, therefore, would not be available to birds.

In response to a question about sludge retention time in digestors, the average retention time will be 17 days at the new RWTP.

Finally, a question was raised regarding the safe level of cadmium in sludge. The Oregon DEQ sludge application guidelines indicate that 25 mg/kg of cadmium is acceptable for general application to agricultural land. Testing of Eugene-Springfield sludge in 1978 indicated 6.1 to 7.7 mg/kg of cadmium in the sludge. The annual application rate cannot exceed 2.0 kg/ha according to DEQ and EPA guidelines (for further discussion, see pages 108 and 109 of the Draft EIS).

Project Costs and Property Value Effects

Five persons commented on project-related costs. Informational requests included the cost of dewatering equipment at the treatment plant and Site C; clarification of user costs, particularly those related to River Road/Santa Clara residents; land acquisition costs, and the effect on project economics; the cost of certain drying and incineration technology; and the use of federal funds for MWMC projects. Four individuals commented on the project's effect on property values.

With respect to the relative cost of dewatering equipment at the treatment plant and Site C, the proposed treatment processes are substantially different, thereby making cost estimations and comparisons difficult. At the treatment plant site, dewatering would occur primarily with the use of capital- and energy-intensive centrifuges. As described on page 58 of the Draft EIS, significant on-site improvements would be required for this alternative. As shown in Table 2-4 on page 59 of the Draft EIS, the present worth capital costs associated with Alternative 3 (treatment at the existing plant) are $9.1

million. Dewatering equipment at Site C consists primarily of centrifuges to be relocated from the existing treatment plant, air drying beds, and lagoons. Under this alternative, centrifuges would not be used to produce a final dewatered product but rather for initial dewatering. This would significantly reduce centrifuge energy costs at Site C. The present worth capital costs of the Site C alternative are estimated to be between $4.5 million and $4.9 million. In summary, the capital and energy requirements of relying only on centrifuges for dewatering significantly increase project costs.

With respect to user costs, the $10.50 per month currently charged to Eugene and Springfield residents covers only operation and maintenance costs of the Lane County Metropolitan Wastewater Service District and of the Cities of Eugene and Springfield. Funds for servicing of the bond debt for the local share of capital costs of the regional wastewater treatment system are provided by local property tax revenues. User costs to future service areas such as residents of the River Road/Santa Clara area will be the same as costs to other users within the service area. By the time residents of these areas are connected to the system, however, user costs are likely to increase above their current levels.

According to the project engineer (Krugel pers. comm.), land acquisition costs at Site C were assumed to be $4,900 per acre in the analysis of project costs. Actual estimates which were made prior to cost projections were somewhat less, but were adjusted to current dollars by the Engineering News Record (ENR) index.

During preliminary stages of the project, a variety of alternative technologies were evaluated by the project engineers. Although the Judco Dryer and O'Connor solid waste burner combination was not looked at specifically, incineration of sludge was evaluated. On-site incineration of sewage sludge was dropped from further consideration because of the following problems: air pollution, poor economics, resources consumption, exclusion of existing uses and nonuse of existing facilities, inflexibility and unreliability, and public image. It should be noted that because all sludge management technologies have certain advantages and disadvantages which may or may not be appropriate for a particular area, EPA does not require use of specific technologies; rather, the local management authority and their project engineers are responsible for evaluating and selecting technologies most suitable for their sludge management needs.

The purpose of EPA's construction grant program for wastewater facilities is to improve the quality of the nation's waters through more effective treatment and disposal of wastewater and wastewater products. As mandated by the Clean Water Act of 1977, this program distributes funds to the states for facility planning and construction. The states then allocate these funds based on a priority list.

The potential effect of the project on adjacent property values involves the interaction of a variety of potentially important factors. Operating conditions at the facility and the type of adjacent land uses, however, are two key elements. Because uncertainty regarding the potential effects of a sludge management project is greatest at the outset, some initial market reaction to the project can be expected. Over the long term, however, the key factor likely will be whether the sludge management facility turns out to be a "good neighbor." Conditions imposed on the project regarding odor control and visual and noise buffers are designed to minimize potential land use conflicts and to ensure land use compatibility.

Unfortunately, property value effects can only be accurately determined over time. Based on other local experiences, however, such as in Salem, the siting of this type of facility in areas predominantly agricultural has not resulted in an adverse effect on property values. With proper operation and maintenance of the facility, and assuming that adjacent lands remain predominantly agricultural, the long-term effect on property values from the project should be negligible.

Alternative Technologies and Sites

A wide range of comments was made regarding the alternatives analysis contained in the Draft EIS. An attorney representing the City of Coburg felt the EIS did not consider an adequate range of alternatives. He also questioned the process adding the Coburg Hills Site to the list of alternative sites analyzed in the EIS. A number of commentors voiced support for alternatives not studied by MWMC, including the Judco dryer with incineration. Alternative 3 (on-site mechanical dewatering with agricultural reuse and landfill disposal) also received support. Other questions were raised regarding septic tanks, dedicated land disposal, the Four Corners off-site location, and the no-action option.

The range of alternatives analyzed in the Draft EIS was determined by a thorough review of the Sludge Management Plan alternatives development and screening process, in-house analysis of sludge reuse options in the Eugene-Springfield area, numerous discussions among EPA, DEQ, MWMC, and Brown and Caldwell staff. Pages 29-60 of the Draft EIS describe the alternatives development and screening process used by EPA and the project engineers and identify the range of alternatives finally considered in the EIS. Rationale for elimination of alternatives is presented on pages 56 and 57 of the Draft EIS. The EIS analyzes two sludge processing alternatives (lagoon storage with air drying and mechanical dewatering), five sludge disposal/reuse options (landfilling, agricultural reuse, forestry reuse, home and garden reuse, speciality market reuse), and four sites for sludge processing facilities (the RWTP site, Site C, the Coburg Hills Site, and the Prairie Road Site). This represents a reasonable range of feasible options for the Eugene-Springfield area.

The range of alternative locations for facilities was established after a thorough staff evaluation of all sites considered in the sludge management planning process. Seventeen sites were visited in the field and the MWMC criteria for rejection were reviewed. As a result, the MWMC preferred site (Site C) and three sites rejected by MWMC (Prairie Road, Coburg Hills, RWTP site) were retained for full evaluation in the EIS. The Four Corners Site was rejected after it was learned that the City of Eugene held title to a portion of the site and was actively considering development of the area as a regional park. This was considered a legitimate rationale for dropping the site. The Coburg Hills Site was retained for consideration because it appeared to offer a degree of remoteness and lack of visible land use conflicts compared to the MWMC preferred site. The landowner and the Mayor of Coburg were notified early in the process (Spring 1983) that the site was to be considered in the Draft EIS.

A number of people suggested the Judco dryer system or Alternative 3 should be considered as replacements for the MWMC preferred plan. EPA's role in reviewing the Sludge Management Plan and preparing this EIS is to act as a funding agency as outlined in the Clean Water Act. The environmental evaluation is not a facilities planning effort. It is the responsibility of the entity applying for federal grant funds (MWMC) and its engineering consultants (Brown and Caldwell) to identify and consider viable options for handling wastewater and sludge facilities needs. The local entity is responsible for considering any technologies of interest to local residents. EPA normally does not reject or request modifications in the alternatives evaluation process unless the range of options considered is obviously lacking in relation to the range of technologies known to be effective. EPA has seen no grounds to reject the alternatives evaluation and selection process used by MWMC or to require MWMC to pursue use of the Judco dryer system. As indicated in the Overview and Summary section of this report, EPA has determined that Alternative 3 is the environmentally preferred alternative. Because of its considerable extra cost and extreme energy demand, however, EPA has determined that Alternative 2 is an acceptable plan if potential adverse impacts are properly mitigated.

Use of septic tanks and the Delta Pits was recommended by commentors. As indicated in an earlier section, septic tanks are not an acceptable wastewater treatment option in densely populated urban areas, and they are not a feasible option for handling the sludge that will be generated at the new Eugene RWTP. The Delta Pits have also been considered by EPA and are not considered an acceptable sludge disposal solution. The rationale for rejection of the Delta Pits is presented on pages 56 and 57 of the Draft EIS.

Two persons felt that MWMC would eventually resort to a dedicated land disposal (DLD) method of sludge disposal if the air-drying and agricultural reuse system did not function properly. There also was fear that this DLD would be located at the off-site storage and drying site. EPA does not intend to fund a DLD project for MWMC, nor is DLD at the off-site location proposed for the project.

One commentor stated that if a no-project option were truly implemented by MWMC, the water quality implications would be much more severe than described in the Draft EIS. EPA agrees that the implications of the no-project option are rightfully questionable because it is not known what action MWMC would take by 1989 if no long-term sludge management solution is selected now. It is unlikely, however, that the existing facilities at the RWTP would be allowed to reach capacity and subsequently cause a direct discharge of liquid sludge to surface waters.

Landfill Disposal

Two comments were made on the landfill disposal aspect of the proposed project. The MWMC stated that the Draft EIS description of the drainage system at Short Mountain was inaccurate or at least unclear. Another commentor felt that the existing leachate control system at the landfill was inadequate and that sludge going to the landfill was poorly handled. Overflows to the Willamette River were predicted.

The description of the drainage system at Short Mountain Landfill should be revised to indicate that the permanent ditches which discharge directly to Camas Swale Creek do not receive runoff from the exposed, active landfill area. Drainage from the active fill area is carried into the leachate lagoon. A leachate collection drain exists at the southern edge of the active landfill area.

The concern about the capacity and operation of the leachate lagoon at the landfill should be allayed by actions taken by the County in the summer of 1983. Problems with overtopping of the lagoon had been identified during the wet winter of 1982-83 and subsequently DEQ requested improvements in the leachate collection and irrigation systems. The lagoon capacity was expanded in the summer of 1983 and is expected to have no further capacity problems in the foreseeable future. The MWMC preferred long-term sludge management plan calls for a cessation of landfill disposal of sludge by 1989. The project, therefore, would not contribute to leachate control problems at the landfill.

Location of Facilities

Comments regarding the specific location of sludge management facilities focused on the facilities planned at Site C. Questions were raised about what part of Site C would be used for sludge storage and whether the pipeline to Site C would have any connection with the Agripac site. Others questioned the use of Site C for sludge processing when septic tanks were not being allowed in the area.

The specific location of facilities within Site C was shown in Figures 2-5 and 2-8 in the Draft EIS. The Draft EIS analyzed the southern portion of the site as part of the MWMC preferred plan (Alternative 2), while the northern portion was considered as part of Alternative 1. MWMC has since indicated that while the southern half of Site C may be preferable, it has not yet selected a specific site and will eventually identify a 125-170 acre parcel for use from within the 295 acres contained within Site C. If the facilities were laid out as shown in the Draft EIS in Figures 2-5 and 2-8, sludge drying beds would be approximately 7,500 feet from the end of Mahlon Sweet Field crosswind runway 3-21 if the northern half of the site were used, or about 8,000 feet from the runway if the southern half of the site were used.

EPA's evaluation of the MWMC preferred plan was based on the use of the southern half of Site C. If MWMC now wishes to reconsider and leave open its options on the location of facilities within the 295-acre parcel, EPA will not be able to reach a decision on MWMC grant requests until a specific location is selected. Also, the facilities plan engineers have indicated that 125 acres are sufficient to contain the off-site facilities; EPA's grant participation would therefore be limited to this scope of project.

Site C is considered acceptable for sludge storage and drying, given local drainage and groundwater conditions, because all facilities will be lined to avoid transfer of sludge constituents into the groundwater. The facilities will also be surrounded by berms to avoid surface flooding. EPA is not aware of specific grounds for septic tank system denial in the vicinity of Site C. Septic tank and leach field systems, however, require an aerated soil layer with adequate drainage conditions to provide a natural filtering of nutrients and other materials prior to leachate reaching groundwater. The seasonally high groundwater and occasional coarse subsoils in the vicinity of Site C would not allow the necessary soil filtering action to occur year-round. This may have been the basis for denial of septic tank systems. Site C facilities are not designed as a waste disposal system, discharging to surrounding soils.

One commentor questioned whether there was any connection between the sludge transport pipeline to Site C and the Agripac site. There is no planned connection between these two facilities.

The Coburg Hills Site

One of the four locations for sludge facilities analyzed in the Draft EIS was the Coburg Hills Site. This site is located north of Eugene and east of Interstate 5, slightly over 1 mile northeast of downtown Coburg. A number of persons living in or representing the City of Coburg expressed concern over the use of this site. This included City Council members, the water commissioner, and an attorney representing the city and the Muddy Creek Irrigation District. Opposition to the use of this site was based on fears of groundwater contamination, odors, property devaluation, visual detraction, and land use incompatibility. These are essentially the same concerns voiced over use of Site C and the Prairie Road Site. One commentor voiced support for the use of the Coburg Hills Site.

EPA has evaluated the use of the Coburg Hills Site through preparation of the Draft EIS. The evaluation disclosed that the pipeline route to the site would possibly impact two archaeological sites located along the route (see page 166 of the Draft EIS), and that use of the Coburg Hills site would not provide a significant economic or environmental advantage over the MWMC preferred Site C. EPA concluded, therefore, that the Coburg Hills site would be dropped from further consideration for grant funding purposes. Because the site will no longer be pursued, questions regarding its analysis in the Draft EIS will not be responded to in this Final EIS. EPA feels the analysis contained in the Draft EIS was sufficient to warrant the rejection of this alternative site.

Land Use

Three land use issues were raised in review of the Draft EIS. One commentor felt that the land use zoning consistency issue associated with Site C had not been adequately resolved in the Draft EIS. Two others felt that Site C should be reserved for industrial uses, which would be more consistent with current zoning and with the site's easy rail, air, and highway access. A final concern was that use of the Coburg Hills Site would violate a number of state land use planning goals.

The land use consistency issue at Site C was resolved, at least on a local basis, when Lane County issued a conditional use permit to MWMC in February 1984 for use of Site C. This permit allows MWMC to use the site for sludge processing, contingent on MWMC complying with a large number of conditions placed on the permit. The County has determined that this use is consistent with current land use and zoning policy for the site.

The County Comprehensive Plan for the area was recently revised and adopted by the County. It has now been forwarded to the Oregon Land Conservation and Development Commission (LCDC) for approval. The revised plan designates the land north of Awbrey Lane in the Site C area as agricultural and it is zoned EFU (exclusive farm use). LCDC is not expected to make a decision on approval or denial of the revised Comprehensive Plan until at least July.

The future use of the Site C area for industrial development is apparently not being considered by the County, as it has rezoned the area from M-3 (heavy industrial) to EFU (exclusive farm use).

Regarding the land use consistency discussion for Coburg Hills, EPA feels that the discussion on pages 160-161 and 163-164 of the Draft EIS was an accurate portrayal. Because the Coburg Hills Site is no longer being considered as an off-site location, further review of this issue has not been undertaken in the Final EIS.

Project Design

Two persons who reviewed the Draft EIS made comments about the design of the Eugene RWTP (now nearing completion) and the design of the proposed facilities at Site C. The questions about the RWTP design were related to hydraulic capacity of that plant and the possible use of secondary clarifier space for sludge storage. Regarding Site C, one commentor wondered if transfer of sludge processing facilities from the RWTP site to Site C would result in construction of duplicate facilities. The question was also asked whether Site C design included acreage for dedicated land disposal (DLD) of sludge. Finally, one commentor asked what safeguards or guarantees for protection of surface and groundwater were designed into the facilities at Site C.

The questions about RWTP design are not directly related to the impact analysis contained in the Draft EIS, but are more appropriately facilities planning questions that should be directed to MWMC. EPA investigated these questions briefly and found that the decision to construct eight rather than ten secondary clarifiers at the RWTP did not result in the freeing-up of a significant amount of space. The design layout of the plant with eight clarifiers does not leave sufficient space for additional on-site sludge storage, in the opinion of the Sludge Management Plan engineers, (Krugel pers. comm.). The question of hydraulic capacity at the RWTP is based on a comment in the Draft EIS regarding the need to expand wastewater treatment, sludge thickening, and digestion capacity if on-site mechanical dewatering were continued as a 20-year sludge management solution. Further investigations of this matter found that implementation of Alternative 3 would not create a hydraulic capacity problem at the RWTP; the continuous recycle of centrate from sludge centrifuging on-site would eventually tax RWTP treatment capacity in terms of BOD and suspended solids removal. The RWTP 20-year design did not anticipate a continuous loading of fine suspended matter and BOD loading from centrifugating of sludge (Krugel pers. comm.).

The transfer of centrifuge facilities from the RWTP site to an off-site storage and drying location will not result in significant duplication of facilities. The centrifuges and their containment structure are designed to be mobile. The only facilities that would be abandoned at the RWTP with transfer of the centrifuges would be the centrifuge building foundation and some buried piping.

The question of DLD of sludge at the off-site location was addressed in an earlier section. No DLD will be allowed at the off-site storage and drying location.

Numerous safeguards have been planned as part of the off-site facilities in order to protect people from surface and groundwater contamination. These have been described in detail in the Draft EIS. Lining of storage lagoons, control and recycle of drainage from drying beds, construction of perimeter berms, and water quality monitoring are the major pollution control features. EPA is further requiring that an impervious seal be installed in all lagoons to prevent leaching of materials into the groundwater (see the Overview and Summary section). As was indicated in response to a question at the Draft EIS public hearing, however, EPA cannot guarantee the performance of each of these design safeguards. Proper construction and operation of the facilities are critical to their proper function.

Errata

This section lists minor changes to the text of the Draft EIS that are needed to respond to comments. The page and paragraph of the change is indicated, followed by the revised text.

Page 165, second paragraph: ..."less than one percent of all County prime farmland"... should be revised to read ..."less than one-tenth of one percent of all County prime farmland"...

Page 142, first and last paragraphs: The statements that bald eagle nest sites are located in the hills east of the Coburg Hills Site should be revised to indicate that bald eagles are known to winter in the vicinity of the Coburg Hills Site.

Page 40, last paragraph: The word "conditioned" should be replaced by the word "thickened".

Page 84, third paragraph: The statement ..."composed of 6 inches of compacted clay"... should be revised to read ..."composed of a minimum of 6 inches of compacted clay"...

Page 78, Figure 3-5: The boundary shown on this figure as the northern extent of the River Road and EWEB Water District is in error and should be deleted.

Page 101, third paragraph: "(this does not include any of the exposed, active landfill area)." should be added to the end of the second sentence.

Other Comments and Questions

A number of the comments and questions received during public review of the Draft EIS were not readily categorized into the broad subject areas discussed on previous pages. This section addresses those questions and comments. Each question has been summarized and followed by a response.

Is the existing sludge lagoon at the Eugene RWTP compacted and lined with clay? The RWTP sludge lagoon was lined with clay and compacted prior to receiving sludge.

How can EPA allow violation of PL 92-500 and PL 95-217 with implementation of the proposed project? EPA does anticipate violations of PL 92-500 or PL 95-217 if proposed water protection safeguards are built into the project.

Was a public hearing held on the southern 125 acres of Site C? The EIS public hearing conducted by EPA on December 6, 1983 considered the southern 125-acre portion of Site C. This area was identified as the MWMC preferred location for off-site facilities and was analyzed as part of Alternative 2 in the Draft EIS.

Who initiated consideration of the southern 125 acres of Site C in the Draft EIS? In a meeting held in Portland, Oregon on February 2, 1983, MWMC requested that the Site C location be expanded to include the additional 125 acres.

Was there a public hearing on the Prairie Road Site? The December 6, 1983 EPA hearing on the Draft EIS considered the use of the Prairie Road Site.

Did EPA know that wells in the Site C area show 0 coliforms in water quality monitoring? EPA found several sources of data on local groundwater quality. Sweet, Edwards &

Associates (1982) reported 0 coliforms in a number of local wells.

Is EPA responsible for funding the proposed project and also for protecting the local environment? EPA is the principal funding agency for the proposed sludge management plan, through the grant program authorized by the Clean Water Act. EPA is also responsible for assuring that environmental impacts are considered in the grant funding program, and adverse impacts are mitigated where possible.

Would a tertiary treatment plant at the RWTP site have resulted in less risk from pathogens at the Site C or Prairie Road sludge handling sites? When wastewater is treated beyond what is typically referred to as secondary treatment, the goal is usually to increase the removal of nutrients from the wastewater (nitrogen and phosphorus compounds). This can be accomplished in a variety of ways, but these tertiary processes usually generate a larger volume of sludge than do secondary processes. The numbers and types of pathogens in the sludge are not necessarily reduced, but their concentrations may decrease. It is unlikely that the addition of tertiary treatment processes at the Eugene RWTP would result in a significant change in the pathogen-related health risk at the off-site sludge handling location.

Is it too late to construct dewatering equipment at the RWTP site? There is sufficient space at the RWTP site to construct mechanical dewatering facilities for the 20-year design load of sludge. MWMC and its engineers, however, have indicated that there is not sufficient space to construct sludge storage lagoons and air-drying facilities for the 20-year design load of sludge. This is one reason that off-site facilities have been sought by MWMC.

How much clay (in inches) is normally required to seal a sludge storage lagoon such as that suggested for Site C? How many inches does the EIS indicate will be placed at Site C? There is no specific requirement for the thickness of clay liners in sludge storage lagoons in the State of Oregon. These design decisions are made on a case-by-case basis. The general design rule used by DEQ for sewage lagoons (including sludge lagoons) is that permeability should not exceed one fourth inch per day. More stringent requirements are possible. In the Draft EIS groundwater analysis, the liner was considered to be a minimum of 6 inches of compacted clay with a permeability rate less than one fourth inch per day.

Did EPA know that Sludge Management Plan progress reports indicate that dedicated land disposal of sludge is planned at Site C or Prairie Road? EPA is aware that some DLD was planned for the off-site location in the early stages of

Sludge Management Plan development. EPA, however, does not consider this solution appropriate, and it is not a part of the MWMC preferred plan as reviewed in the Draft EIS.

If sludge will not be allowed at the Short Mountain Landfill after 1989, will some other DLD site be identified and approved by EPA after 1989? Under the MWMC preferred plan, all sludge will be dried and go to agricultural reuse after 1989. No DLD is planned after 1989 and EPA will not be considering authorization of a DLD site.

How will vibration from the adjacent railroad affect the clay liner at Site C? Clay is naturally a resilient, flexible material when it contains some moisture. Sludge lagoon clay liners should not be damaged by vibration from the railroad as long as they are not exposed to the open air for extended periods, and thus allowed to dry. The design of the sides of the lagoons should take into account the possibility that vibration could encourage slumping along steep slopes.

Although the EIS indicates there are no airports near the Coburg Site, there are three private landing strips within 6,000 feet of the site. During review of the bird strike issue, EPA identified the private landing strips in the vicinity of the Coburg Site. The investigation found, however, that the strips were infrequently used, and were never used by turbojet aircraft. They were not considered a factor in the bird strike issue.

Would not the off-site sludge facilities at Site C detract from potential investors' first impressions of Eugene, if they arrive via Mahlon Sweet Airport? If the off-site facilities are located at Site C, they will not be highly visible to travelers moving from the city to the airport. They will obviously be visible from the air. It is also possible that odors generated at the facility may occasionally reach the airport area. The frequency of this occurrence is expected to be quite low, however, unless the facilities are poorly operated or maintained.

The Draft EIS inaccurately portrays the opponents of the MWMC plan as primarily residents of the area between Eugene and Junction City, while the supporters are from the farming community. In truth, many of the opponents are also farmers. EPA agrees that the description of those voicing concern over the project is not all-inclusive. Many of those persons living in the vicinity of Site C and Prairie Road are from the farming community and are opposed to the MWMC preferred plan.

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Geotechnical Consultants, Inc. October 19, 1982. Unpublished letter report from Charles Kendall to Steve Krugel of Brown and Caldwell, Eugene, Oregon.

Hudzikiewicz, Joe. April 3, 1984. Planner, Lane County Planning Division, Eugene, Oregon. Telephone conversation.

Krugel, Steven. March 30, 1984. Engineer, Brown and Caldwell, Eugene, Oregon. Telephone conversation.

Lowenkron, Larry. April 3, 1984. Regional Engineer, Oregon Department of Environmental Quality, Salem, Oregon. Telephone conversation.

Peroutka, Alan. April 4, 1984. Civil Engineer, Metropolitan Wastewater Management Commission, Springfield, Oregon. Letter (with attached groundwater data) to Michael Rushton of Jones & Stokes Associates, Inc.

Thomas, Jack. March 26, 1984. Lane County Land Management Division, Eugene, Oregon. Telephone conversation.

Acronyms and Abbreviations

BOD	biochemical oxygen demand
DEQ	Oregon Department of Environmental Quality
DLD	dedicated land disposal
EFU	exclusive farm use zone
EIS	Environmental Impact Statement
EPA	U. S. Environmental Protection Agency
FAA	U. S. Federal Aviation Administration
FEMA	U. S. Federal Emergency Management Agency
FNSI	Finding of No Significant Impact
LCOG	Lane Council of Governments
LCDC	Oregon Land Conservation and Development Commission
LIM	Land Inventorying and Monitoring Memorandum
mg/kg	milligrams per kilogram
MWMC	Metropolitan Wastewater Management Commission
M-3	heavy industrial zone
PCB	poly-chlorinated biphenyl
RRSC	River Road/Santa Clara
RWTP	Regional Wastewater Treatment Plant

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List of Report Preparers

U. S. Environmental Protection Agency - Region 10

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Michael Rushton - Environmental Scientist, Project Manager, All report sections other than economics.

Thomas Wegge - Environmental Specialist III, Economics.

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Appendix A

Letters of Comment

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DEPARTMENT OF THE ARMY
PORTLAND DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2946
PORTLAND, OREGON 97208

December 20, 1983

Planning Division
(PL-NR-EQ)

Ms. Norma Young
M/S 443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, Washington 98101

Dear Ms. Young:

We have reviewed the Draft Environmental Impact Statement (DEIS) on the Metropolitan Wastewater Management Commission Sludge Management Plan, and have no comments.

Thank you for the opportunity to review this document.

Sincerely,

Patrick J. Keough, P.E.
Chief, Planning Division

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DEC 28 1983
ENVIRONMENTAL EVALUATION
BRANCH

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
SEATTLE REGIONAL OFFICE
ARCADE PLAZA BUILDING, 1321 SECOND AVENUE
SEATTLE, WASHINGTON 98101

REGION X

IN REPLY REFER TO:

DEC 7 1983

Ms. Norman Young, M/S 443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

Dear Ms. Young:

SUBJECT: Draft Environmental Impact Statement
Sludge Management Plan
Eugene-Springfield, Oregon

We have reviewed the draft statement submitted with your October 28, 1983 letter. The proposed action would not adversely impact any HUD assisted projects, thus we find no objection to your preferred sludge management plan.

Our Portland office has reviewed your statement in detail and they have some suggestions which are attached for your consideration.

We thank you for the opportunity to review and comment on your draft statement.

Sincerely,

Ry Tanino

Ry Tanino
Regional Environmental Officer, 10CE

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AREA OFFICES
Portland, Oregon - Seattle, Washington - Anchorage, Alaska

Aesthetics are addressed by landscaping and somewhat remote locations and odors appear to be controlled by operating and maintenance features.

The report addresses significant environmental issues in a responsible manner and appears to have minimal impact on residential uses and water quality other than what is projected in the comprehensive plan.

I believe one typographical correction should be made on page 165 in the second paragraph.

Prime farmland lost seems to be one-tenth of one percent rather than one percent.

Equipment under the BPA power lines may need to be shielded from ice forming and dropping from lines and from radiation and leakage. Appropriate grounding of metal objects is necessary. Ground-fault interupters are also recommended.

Thank you for the opportunity to comment.

U.S. Department of Housing and Urban Development
Portland Area Office, Region X
Cascade Building
520 SW Sixth Avenue
Portland, Oregon 9720

RECEIVED-SPO-CPD
DEC 2 [illegible]

NOV 29 1983

MEMORANDUM FOR: Robert C. Scalia, Director, Regional CPD, 10C

THROUGH: R. C. Brinck, Manager, 10.3S

FROM: Clifford T. Safranski, Environmental Clearance Officer, 10.3SE

SUBJECT: Draft Environmental Impact Statement - Sludge Management Plan, Eugene/Springfield, Oregon

We have reviewed the subject EPA-10-OR-Eugene/Springfield - Lane-WNTN 83 Draft Environmental Impact Statement (DEIS) and concur with their treatment of secondary impacts as they effect HUD programs.

We would, however, suggest the following:

Short Mountain Landfill

Definition of what actions would be undertaken if the monitoring wells reflect a problem would be helpful.

Forge Main Routes

The statement that periodic pressure testing can determine leakage but not the location of the leakage could be refined to alleviate concern. Perhaps sequential closing of valves would permit pressure testing of pipe segments in a manner that would isolate the leakage for locating it.

Agricultural Sites

Since flood-irrigation practices appear to be a problem perhaps trickle irrigation or a more acceptable method may be introduced to owners of effected sites to reduce erosion and control run-off.

Mitigation

The use of the treatment plant site which is on the edge of the 100 year floodplain and the other sites which can effect creeks and drainage areas appear to be addressed by use of berms, dikes and ditches and impervious lining for lagoons and drying beds.

United States Department of the Interior

OFFICE OF THE SECRETARY
PACIFIC NORTHWEST REGION
500 N.E. Multnomah Street, Suite 1692, Portland, Oregon 97232

ER 83/1412

January 12, 1984

RECEIVED
FEB 3 1984
ENVIRONMENTAL EVALUATION
BRANCH

Environmental Protection Agency
Environmental Evaluation Branch
Attn: Norma Young M/S 443
1200 Sixth Avenue
Seattle, Washington 98101

Dear Ms. Young:

The Department of the Interior has reviewed the Draft Environmental Statement (DES) for Sludge Management Plan, Eugene-Springfield, Lane County, Oregon. We ask that the following comments be considered for the proposed project.

Water Resources

The U.S. Geological Survey reports the following:

Page 84, Site C: It is indicated that "leaching would virtually cease" in fall and winter because of a high water table that may, in places, reach the ground surface (p. 97). However, we believe that ground-water mounding beneath the area of infiltration would create a gradient for the lateral movement of leachate and that leaching will still occur if the rise in the water table results in saturation of the sludge.

Page 127, Sludge Disposal: We note that the Metropolitan Wastewater Management Commission's guidelines require monitoring to water-supply wells near sludge reuse sites. The environmental statement should address what actions will be taken if the monitoring reveals significant degradation of drinking water in those wells.

Thank you for the opportunity to review and comment on this DES.

Sincerely,

Charles S. Polityka

Charles S. Polityka
Regional Environmental Officer

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado, Idaho, Montana,
Oregon, Utah, Washington,
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17900 Pacific Highway South
C-68966
Seattle, Washington 98168

December 16, 1983

Ms. Norma Young M/S 443
Environmental Protection Agency
1200 Sixth Avenue
Seattle, Washington 98101

R[illegible]D
[illegible] 1983
ENV[illegible]
[illegible]TION

Dear Ms. Young:

We have reviewed the draft EIS for the Eugene, Oregon Sludge Management Plan and have the following comments:

a. Site C would be located less than 10,000 feet from Runway 3-21 at Mahlon Sweet Field. Runway 3-21 is used by turbojet aircraft. FAA Order 5200.5 establishes 10,000 feet as the distance within which the facilities of the type proposed may be incompatible with safe flight operations. The EIS agrees that the selection of the distances specified in Order No. 5200.5 represents a reasonable determination of the danger zone around an airport.

b. Given that sludge facilities within 10,000 feet of a turbojet runway represents a reasonable determination of danger we cannot find anything in the EIS analysis which would indicate that construction of these facilities within this area would lessen this danger. Indeed, the EIS agrees that waterfowl use on Site C or Prairie Road would increase, albeit, slightly.

c. The above notwithstanding, should the proponents persist in constructing these facilities within 10,000 feet of Runway 3-21 at Mahlon Sweet Field the following mitigation actions should be taken:

    (1) Support structures for a wire or screen system above the FSL's should be designed and incorporated in the initial construction of the facilities. If wires are used they would be installed on 10 foot centers over the entire lagoon. The height would be such as to allow adequate facility maintenance. The actual installation of the system could then be more economically accomplished at a later date if it became necessary.

    (2) A waterfowl monitoring study at the proposed FSL's would be conducted for a period of one year following construction of the facilities.

    (3) Should the study so indicate, the following measures would then be taken as appropriate. Aerators would be operated continuously, day and night, to discourage waterfowl from feeding during the fall, winter, and spring. The above described wire or screen system would be installed if continuous aeration failed.

d. Whatever decision is made regarding construction of these facilities, it should be clearly understood that the Metropolitan Wastewater Management Commission bears the responsibility for correcting any bird hazard problems that are created as a result of this project, should it be developed contrary to the guidelines described in FAA Order 5200.5.

Sincerely,

George L. Buley

George L. Buley
Manager, Planning and Programming Branch

cc:
Mr. Paul Burket
Mr. Bob Shelby

U.S. Department
of Transportation

**Urban Mass
Transportation
Administration**

Region X
Alaska, Idaho,
Oregon, Washington

915 Second Avenue
Suite 3142
Seattle, WA 98174

November 2, 1983

Norma Young MS/443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

Dear Ms Young:

The Urban Mass Transportation Administration has no comments with respect to the Environmental Impact Statement for the Sludge Management Plan for the Metroplitan Wastewater Management Commission, Eugene-Springfield, Oregon.

Thank you for the opportunity to comment.

Sincerely,

Aubrey Davis
Regional Administrator

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NOV 3 1983
ENVIRONMENTAL EVALUATION
BRANCH

VICTOR ATIYEH
GOVERNOR

Department of Fish and Wildlife
NORTHWEST REGION
3150 EAST MAIN STREET, SPRINGFIELD, OREGON 97477 PHONE 726-3515

December 1, 1983

Ms. Norma Young M/S443
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

RE: Draft EIS, Eugene-Springfield Sludge Management Plan

Dear Ms. Young:

On page 142 of the Draft EIS I am quoted in two different paragraphs (first and last) as saying there are several bald eagle nest sites in the Coburg Hills area. This information is erroneous. What I did say was there are observations of bald eagles wintering and roosting in the Coburg Hills area. I know of no nesting sites. Please correct the final copy of the EIS to reflect this change.

Thank you.

Sincerely,

Brian T. Ferry
Asst. Dist. Wildl. Biologist
Lane District

BF/mw

cc: J. Fessler

RECE
DEC 5 1983
ENVIRONMENTAL EVALUATION BRANCH

VICTOR ATIYEH
GOVERNOR

Executive Department

155 COTTAGE STREET NE., SALEM, OREGON 97310

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ENVIRONMENTAL EVALUATION
BRANCH

February 21, 1984

Norma Young M/S 443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

SUBJECT: Sludge Management Plan
PNRS # OR840112-020-4

Thank you for submitting your draft Environmental Impact Statement for State of Oregon review and comment.

Your draft was referred to the appropriate state agencies for review. The State Historic Preservation Office offered the enclosed comments which should be addressed in preparation of the final Environmental Impact Statement.

We will expect to receive copies of the final statement as required by Council of Environmental Quality Guidelines.

Sincerely,

INTERGOVERNMENTAL RELATIONS DIVISION

Dolores Streeter

Dolores Streeter
Clearinghouse Coordinator

DS:bm
Enclosure

OREGON PROJECT NOTIFICATION AND REVIEW SYSTEM

STATE CLEARINGHOUSE

Intergovernmental Relations Division
155 Cottage St NE , Salem, Oregon , 97310
Phone Number: 378-3732

PNRS STATE REVIEW

Project #: [illegible] Return Date: [illegible]

ENVIRONMENTAL IMPACT REVIEW PROCEDURES

If you cannot respond by the above return date, please call to arrange an extension at least one week prior to the review date.

ENVIRONMENTAL IMPACT REVIEW
DRAFT STATEMENT

☐ This project has no significant environmental impact.

☒ The environmental impact is adequately described.

☐ We suggest that the following points be considered in the preparation of a Final Environmental Impact Statement.

☐ No comment.

Remarks

if the Woberg area is selected —
further compliance must
be documented

Draft EIS
Metro wastewater
Eugene/Springfield

Agency SHPO By FOR FURTHER INFORMATION
PLEASE CONTACT LELAND
GILSEN AT [illegible]

PNRS #8

LCOG Lane Council of Governments
NORTH PLAZA LEVEL PSB / 125 EAST EIGHTH AVENUE / EUGENE, OREGON 97401 / TELEPHONE (503) 687-4283

December 15, 1983

Ms. Norma Young M/S 443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

Dear Ms. Young:

As its regular December 8, 1983 meeting, the Lane Council of Governments Board of Directors discussed the Draft Environmental Impact Statement for the Metropolitan Wastewater Management Commission Sludge Management Plan.

The Board of Directors voted unanimously to express concern over two aspects of the Draft EIS. The first concern of the Board was about the relative lack of water quality information for all three off-site sludge handling facilities. The Board also expressed concern about the possible long-range impacts on soil and water quality resulting from the application of sludge and the failure of the draft EIS to address this.

If you have any questions, please feel free to contact me.

Sincerely,

John Replinger

John Replinger, Program Manager
Transportation and Energy

JR:jwcl

cc: Metro Wastewater Management Commission

1983

NTAL EVALUATION
BRANCH

SERVING CITIZENS OF LANE COUNTY FOR MORE THAN A QUARTER OF A CENTURY

Metropolitan Wastewater Management Commission

COMMISSION MEMBERS
Christine Larson—Springfield Councilperson
Gerald Rust—Lane County Commissioner
Pat Hocken—Eugene Lay Representative
Betty Smith—Eugene Councilperson
Steve Allen—Springfield Lay Representative
Mark Westling—Eugene Lay Representative
Gary Wright—Lane County Lay Representative

225 NORTH 5TH ST. — SPRINGFIELD CITY HALL — SPRINGFIELD, OREGON 97477 TELEPHONE (503) 747-4551

December 15, 1983

Ms. Norma Young, M/S 443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

SUBJECT: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR EUGENE/SPRINGFIELD SLUDGE MANAGEMENT PLAN

In pages 42, 43 and 44 of the draft EIS for the Eugene/Springfield sludge management plan there are references to the relocation of the preferred Site C facilities to a location south of the position previously proposed in the 1980 Brown and Caldwell facilities plan. We would like to point out that the Commission's official position on this subject is spelled out in a resolution which was adopted by the Commission on October 27, 1983 (Resolution No. 83-26; attached) which recognizes that the additional area identified south of the original area at Site C may be a more desirable location for the Phase II sludge management facilities. Thus, this area was included as an alternative site for the sludge management system but was never designated a preferred site. It is the Commission's preferred alternative to locate the sludge management facilities within the approximately 295 acres identified as Site C in Figure 2-6 of the draft EIS and to acquire the approximately 125-170 acres necessary from within this expanded identified parcel of land.

We would also like to pass along some comments received from the Lane County Public Services Division concerning the information presented in pages 101 through 103 on the Short Mountain Landfill. They have pointed out that contrary to Figure 3-11 in the EIS, that water generated on the site is routed away from the active fill area and that the ditching shown in Figure 3-11 is actually outside of the landfill area so only uncontaminated water is discharged to Camas Swale Creek. A subsurface leachate collection line is maintained along the south edge of the active fill areas and this line is designed to collect leachate from the fill areas and discharge into the leachate lagoon. Lane County has expanded the size of the leachate lagoon to assure that no discharge of leachate occurs. Lane County Public Services Division has passed along to us the attached modified Figure 3-11 which they feel more closely represents the actual patterns of drainage at the Short Mountain Landfill.

Thank you for this opportunity to comment. We hope to have our consultant's comments in shortly.

Very truly yours,

Edward Black

EDWARD BLACK
Environmental Affairs Supervisor

EB:AP:sh

cc: DC
BCS

Enclosure

METROPOLITAN WASTEWATER MANAGEMENT COMMISSION

RESOLUTION NO. 83-26

(IN THE MATTER OF THE
(NECESSITY TO ACQUIRE
(SITE C)

WHEREAS, the Commission at its March 12, 1981 meeting unanimously adopted a motion approving action to acquire Site C as the sludge management site.

WHEREAS, an additional site immediately south of Site C and west of the Southern Pacific right-of-way may be a more desirable location for the sludge management site.

WHEREAS, the draft Environment Impact Statement recognizes both the additional site and Site C as a potential location for the sludge management site.

WHEREAS, it is the desire of the Commission to reaffirm its motion of March 12, 1981, and include the alternative site as an alternative location for the sludge management site.

NOW, THEREFORE, BE IT RESOLVED BY THE METROPOLITAN WASTEWATER MANAGEMENT COMMISSION:

1. That it is necessary for the Commission to acquire approximately 125 to 170 acres for the sludge management site for the permanent sludge management program.

2. That the Commission proceed with action to acquire the approximately 125 to 170 acres for the sludge management site from that property identified as Site C in the draft Environmental Impact Statement consisting of approximately 295 acres and located north of Awbrey Lane, south of Meadowview Road, east of Highway 99, and west of, and adjacent to, the Southern Pacific right-of-way.

ADOPTED BY THE METROPOLITAN WASTEWATER MANAGEMENT COMMISSION of the Eugene-Springfield Metropolitan Area this 27th day of October, 1983.

President

ATTEST:

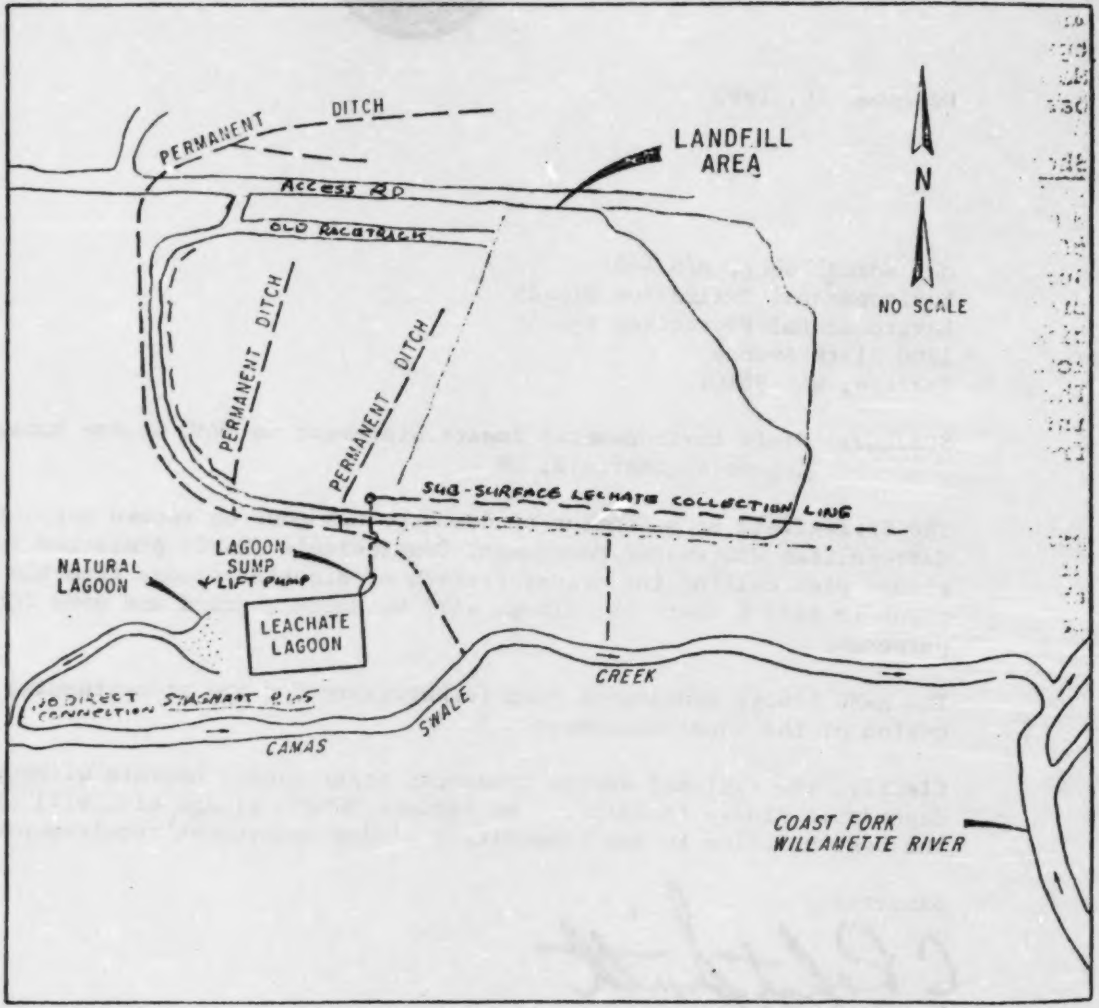
PERMANENT DITCH
LANDFILL AREA
N
ACCESS RD
OLD RACETRACK
NO SCALE
PERMANENT DITCH
PERMANENT DITCH
SUB-SURFACE LECHATE COLLECTION LINE
LAGOON SUMP
+LIFT PUMP
NATURAL LAGOON
LEACHATE LAGOON
CREEK
NO DIRECT CONNECTION
STAGNANT RIPS
SWALE
CAMAS
COAST FORK WILLAMETTE RIVER

FIGURE 3-11. SURFACE DRAINAGE FEATURES AT SHORT MOUNTAIN LANDFILL

SPRINGFIELD AREA CHAMBER OF COMMERCE
223-H NORTH A STREET P.O. BOX 155 SPRINGFIELD, OREGON 97477 PHONE (503) 746-1651

December 19, 1983

Ms. Norma Young, M/S 443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

SUBJECT: Draft Environmental Impact Statement on MWMC Sludge Management Plan, Eugene/Springfield, OR

The Springfield Area Chamber of Commerce has gone on record supporting the Metropolitan Wastewater Management Commission's (MWMC) preferred long-range sludge plan calling for transportation of digested sludge from the treatment plant to Site C where the sludge will be stored, dried and used for agricultural purposes.

The MWMC Sludge Management Plan is necessary for the strengthening and diversification of the local economy.

Clearly, the regional sewage treatment plant cannot operate without a reliable dependable sludge facility. We believe MWMC's sludge plan will prove to be the best solution to our community's sludge management requirements.

Sincerely,

C Robert Smith

C. Robert Smith
Executive Vice President

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BRANCH

Only One Law would be necessary - Thank God - the Golden Rule - "Do unto others as you would have them do unto you"   What have the people of Site "C" or Prairie Road or people of Junction City done to the city of Eugene or MWMC.

City of Eugene and MWMC through their agents have, if Site "C" or Prairie Road is used as storage of Eugene's sewage sludge which has lead, lindane, andorin, methosic chlorate, technical chlordane, toxiphine, PCB's 2-4-D, silver, copper, berium, boron, cadmium, chromium, selinium, mercury, arsenic, zinc, and others:

EIS

evidence [illegible]

Eugene/MWMC:

Violates the Public Laws 92-500 and 95-217 confine pollutants so they won't contaminate - placing heavy metals, toxic pollutants directly over the known domestic water supply for Junction City and residents of Site "C" and Prairie Road site is in violation of these laws.

Violation of EPA Law - not to create Bird Strike Hazard within 10,000 feet of Airport. Southern Pacific Railroad line is 10,000 feet away from the Airport - all of Site "C" is by EPA Law not lawful for sewage storage. Violation of EPA Law.

Violation of FAA 5200.5 Aircraft Safety Advisory -

Placing sewage that attracts Bird - potential Bird Strike Hazard within 10,000 feet Airport. If map presented by MWMC of the area is activated sludge would be located, as close as 4,000 feet approximately to Runway 21 which flies directly over Site "C on take off and landings. Violation of Law! EPA - HB 3174 & FAA

Placing sewage on Site "C" or Prairie Road considered by FAA as the same concern - FAA believes it could cause Bird Strike Hazard and warned Eugene and MWMC not to locate the sewage on those sites. Violation of Law! HB 3174 & EPA & FAA

DEC 19 1983
ENVIRONMENTAL EVALUATION BRANCH

Locating the Airport directly between Fern Ridge Lake - roosting for waterfowl, and sewage attracting disposal on Site "C" or Prairie Road sites - violating the FAA advisory 5200,5. By Eugene owning the Airport to not eliminate such potential for Bird Strike Hazard they would be putting themselves in non-compliance with federal funding for not eliminating such potential hazard. Birds crossing all runways. Should Eugene place sewage on Site "C" - one Bird Strike Hazard occurs - FAA can withdraw certification from the airport and commercial airlines would not be able to land there. Causing Economical Suicide to city of Eugene!

Why are Eugene & MWMC so intenton violatingthe Laws and taking the chance of contaminating another City's water supply - Junction City, chance of destroying life in Airplane crashes, why? - - what did these people of Site "C" and Prairie Road site ever do to Eugene?

Sacremento Bird Study said Aircraft should remain above 1500 feet over such an area of sewage to prevent Bird Strike Hazard - as Brown & Cadlwell report says planes will be taking off and landing at altitudes of 400 to 600 feet - such altitudes would not by the study be considered safe.   How was Brown & Caldwell's conclusions reached? When asked who did the bird study - comments were made at MWMC meeting not all the data he had given came from the study but was Brown & Caldwell's conclusions. Could life be lost by Aircraft Bird Strike Hazard because of Brown & Caldwell's conclusions?? Over half a million people a year use this airport - Runway 21 was reported to me as having 45% of all aircraft used it when I talked with Bob Shelby of that previous year.

Violation of our Civil Rights? There was no public hearing for Prairie Road Site nor the additional 125 acres on Site "C"? In comment of Sara Bachhuber on December 4, 1983 Dec 6, 1983 is the public hearing on the additional 125 acres - was the people informed?? Apparently it would have to be the Prairie Road site hearing by the public, also? The 125 acres was first introduced as far as I can find out by Register Guard article that closed meeting decision for 125 additional acres was made on Site "C". The public has been withheld from true facts, how did the additional 125 acres get into the EIS report without the public first having the public hearings on it? Also Chet Swenson received a notice that Dec 15, 1983 county commissioners are to hold public hearing for conditional use for Site "C" - isn't that unusual since the public hearing on the EIS hasn't supposedly picked Site "C" yet?   Or were all the Public hearings a FARCE?

Violation of our Constitutional Rights - Violation to Life, Liberty and Pursuit of Happiness! - by destruction of water [illegible]nd - you destroy these quickly.

You are playing Russian Roulette with people's water, land, lives!

What right do you have to operate outside the Law? How does Eugene have the right to condemn property in the county, outside their urban growth boundary, outside their urban service area, what law # allows that?

We have tried through letters, meetings to stop the POLLUTION of our WATER and LAND by Eugene's toxic, heavy metals, hospital infections sewage sludge. In response we learned of Shirley Ditch project where Eugene injected high ammonia nitrate injections into the aquifer in north Santa Clara area on April 12, 1979, not getting the reading they wanted they doubled the ammonia nitrate injections on April 30, 1979. On April 26, 1979 they introduced 440 million ESCHERICHIA Coli bacteria, opportunistic strain into the aquifer to check water flow. Was EPA aware of this action? Was there other injections made in other areas? Was this the area where the 70 mg/l nitrate was reported by DEQ? Was that 70 mg/l injected by Eugene? Could this be the background for the comment between Freeman and William Pye when Freeman asked about River Road/Santa Clara health - William Pye responded "OH, WE'LL BLOW EM RIGHT OUT OF THE WATER"? Because we have been trying to bring to EPA attention and officials of the government what we believe to be illegal acts against the people's water and health by writing and sending information from their MWMC meetings, documents, Brown & Caldwell, CH2M Hill - did comment by KVAL-TV Skip Lindeman after apparently conferring with William Pye - "He thinks the whole thing is going to far. 'We used to think only residents were concerned about this. Now we have our hands full with a whole bunch of crasies."

If we are wrong for trying to make federal officials aware of crime against the people's water, health, very lives, found in their own reports, meetings projects funded by FEDERAL money - then I guess you would consider us crazy. We believed Federal money was obtained to protect the water, not destroy ours. Public Law 92-500 and 95-217? Locating a toxic, industrial heavy metals, hospital diseases, over a known domestic water supply for Junction City is a violation of law! Ours and Junction City's SOLE SOURCE water supply. Wells have been tested and our water is good. The information given out by MWMC ought to be questioned.

Please see Legislative Bulletin page 2 - No 29/79 January 10, 1979
GAO SAYS OK TO SEPTICS: The General Accounting Office (GAO), in a report to Congress, called septic systems, "environmentally sound, technologically feasible, and cost effective" alternatives to costly sewer and central treatment facilities.
The report concluded that, if properly constructed and operated, septic systems

* can be as permanent as central treatment facilities;
* are often more ecologically sound than sewers and central facilities; and;
* can provide a high degree of wastewater treatment, as good or better than effluent from central treatment plants.

Also check North Carolina Septage Study - which infers that there is no proof that properly working septic tanks systems put out any disease causing pathogens. Yet North Carolina Septage study stated that activated sludge from treatment plants when put on land has caused endemic and epidemic conditions.

I believe MWMC has informed the federal government that they have so many farmers wanting that sewage sludge they can't meet the demand for it. The farmers in the Site "C" and Prairie Road have signed petitions that they won't use sewage sludge on their land, what farmers names do they have to get additional 10% funding for as alternative and innovative sewage use? Did putting sewage sludge on Marquess land in Creswell cause pollution of the neighboring wells? Was the lagoon on the Eugene treatment plant lined? Lined with clay? Compacted? Why did the reading of Larson well used as control on Gary Lewis Prothero Thesis studying Eugene Treatment Plant and Eugene's sewage in soil, grasses and heavy metals - in 1975-6 showed 0 coliform for Larson sealed drinking water well - which was called E IX well for River Road/Santa Clara Groundwater Study after sewage lagoon was installed? lined? reading of well went to 330 total coliform count - well was marked bulldozed by MWMC, replaced and reading 50,000 total coliform count E IX well - contamination of domestic well occurred from Eugene treatment plant operation or didn't it? Violation of the law also occurred by sewage flowing over onto Larson property without DEQ penalty, without cleaning it up. DEQ in Brown & Caldwell report says grasses in this area won't uptake heavy metals - Gary Lewis Prothero Thesis shows Eugene sewa A-20 uptake into the grasses & lowers the pH of the soil using sewage sludge on the land. DEQ trying to waiver the 6.5 pH of soils when sewage sludge applied to farm land? Heavy metals penetration allowed & pathogens?

They have criminally trespassed on our land where they had no right to be. Through the Eminent Domain Law they took us to Circuit court and Oregon Supreme Court condemning the east 25 feet of our property for an easement to put in the Agripac Pipeline. The east 25 feet of our peropty is on the east side of Prairie Road. Where did they put the Agripac pipeline? They put it on the west side of Prairie Road - not where they took us to court over! Our attorney notified them before they started digging that they were in error. We told the workmen if they kept on digging they would be committing Criminal Trespass. They went right ahead. It is recorded on Video Tape of the Criminal Trespass! Now in front of all these wittnesses - I order you to get this illegal Agripac line off our Property right NOW! You have clearly demonstzated to us for the last five years you have no regard for the Law or for Human Rights. It is my belief that "God" and a lot of others know why Eugene Oregon is called "Little Russia" by other parts of the country - and no business or people would ever locate here - the way the People who get in your way are treated! Human rights are a Joke to you!

As the Senator of Idaho said in the Register Guard - "There has been more people killed over water than over women or horses".

For the same or less money all the sludge and Industrial wastewater (all toxics) could have been taken care of at the treatment plant. When CH2M Hill estimated to build a third stage treatment plant with tertiary treatment for $67 MILLION. Brown & Caldwell built a second stage treatment plant without tertiary treatment, without River Road/ Santa Clara Interceptors, without 2 secondary clarifiers, without recycle loads, without an effluent pump station (that were included in CH2M Hill bid). Those items removed by Lane County tax values, CH2M Hill estimate totaled about $29 million REMOVED. Brown and Caldwell building that second stage treatment plant for $104 MILLION. Why did you pay twice as much not to get third stage treatment?

Since you didn't build alternative plants that were offered to further treat the sewage and make by-products, Proved equipment by Judco dried sewage sludge to 5% to send for proof it would burn without being lost in uptake. Also in process of combining with proven equipment that incinerates sewage after that 5% drying had taken place. It was found that drying by that system to 50% it could be burned apparently with solid waste thereby answering two nation-wide problems without loss to atmosphere - but return in steam byproduct. I know I don't know technically the right words to descrbie it but have tried to so that EPA will investigate the potential for nation-wide answer to solid waste and sewag sludge. The way Brown & Caldwell and MWMC have the sewage sludge answered is to take at this time WHAT - 3,500 acres out of food crop production to put sewage sludge on to start out with - what amount needed for 20 years? Is the map in 208 Plan adjoining area of Agripac Federally financed site containing 10,000 acres described for 20 years needs of 49 MCD dewage plant intended for use without the Public being made aware of it? How many more laws are you going to let be broken before you ACT? to PROTECT the Environment and the People?

Can you prove that Bill Larson's mother's cancer wasn't caused by sewage, heavy metals contamination of their well? Can you prove that Bill Larson's death by cancer wasn't caused by sewage, heavy metals contamination of their well? It appears that the report of Gary Lewis Prothero Thesis showed heavy metals concentrations - zinc reported 4400 when limit is 2000. William Pye says there is no heavy metal to worry about. How does Cadmium given by Gary Lewis Prothero Thesis as 11 -- Cadmium given by Brown & Caldwell or MWMC on Marquess sewage report as 16 PPM - correspond to amount that can be put on land and when it would reach life use of the site? By CBE report - Illinois - Cadmium is a tumor producing substance, crosses placenta causing birth defects, causes chromosomal damage, when cadmium is mixed with soil and leafy vegetables are raised in soil cadmium multiplies 978% in the leafy vegetables, 2,417% in legumes (I believe that describes clearly leafy vegetables were mentioned by B&C not to grow on sludgeed soil).

How many of the ones receiving part of the $104 Million Federal funds and Local are going tto use sewage sludge on their own land? The farmers when agreeing to take sewage sludge on their lad sign an agreement that releases Eugene, MWMC from damages if the farmers land is permanently destroyed, if someone becomes sick from contact with sewage on his land, the farmer is the only one in danger of [illegible] sued. Where is the farmer's protection? who will stand up and be counted to protect Junction City's and our water supply from these fraudulant acts by Eugene and MWMC? Brown & Caldwell report says once it becomes contaminated there is no way to correct it !!

Page 192 of EIS - 43 dry tons year initial use. Assuming Cadmium 7 mg/kg (B&C 1979) Cadmium loading rate would be 0.7 kg/ha, which is over the 0.5 kg/ha level set by EPA for soils supporting leafy vegetables crops grown for human consumption. This loading would result in exceedance of maximum cumulative Cadmium standards for agricultural land within 8-33 years depending on soil pH., CEC. Annual nitrogen addition to the site would exceed those recommended to control leaching. In summary DLD of sludge would limit future agricultural use of the soils to nonfood chain crops on the site. As 16 PPM mentioned in Marquess sludge report for his land - wouldn't this be excessive as much as his land is expected to take of the sewage sludge. As Lowenkron inferred - could Marquess property receive that sewage for over 50 years without cadmium build up in his land?

EIS report infers that microbial pathogens, heavy metals, toxics are not removed by the new sewage treatment plant - infections; virus, hospital diseases - did anyone check with the Federal Government and the over 1,000 acres owned south of Fern Ridge Lake for Bird reserve - not land over water wells for domestic use, not land used for leafy vegetables, summer human food chain crops, dairy cattle, if land disposal is the answer? Why was cemented gravel pits at river site considered unsuitable, yet pits of sewage in open gravel, sand, some areas of Site "C" and Praire Road have gravel to surface to ground over a known domestic water supply where people all depend on their wells was considered suitable sewage sludge disposal site?

As I was informed by Norma Young - Agripac was funded for dual lines - then it changed, how do we know that the dual 8" lines for Site "C" or or Prairie Road or whereever won't change? CH2M Hill estimated dual lines for Agripac and all for $3,678,000 - yet Brown & Caldwell are putting in one line and all for $8,000,000 approximately - where is the Value Engineering to that project or was CH2M Hill estimate considered false? If so, then the evidence spoken to the public at public hearings has also been false.

Eugene has violated the citizens of Springfield's rights by denying them right to vote on sewage rates - with this millions of dollars variance in Engineer estimates - who can protect the people's rights? The $10.50 per month charge doesn't pay any on the bonding does it? One paper found in the DEQ files showed River Road/Santa Clara residents when added to the treatment plant would pay terrific costs - is that true?

As was reported by Pye pers comm in the EIS - was legislation introduced or passed that allows condemnation without show cause?

page 186 - accumulation of metals & toxic substances through forest food chain & transmission of disease, such as Giardiasis & Salmonellasis, by game animals. - areas that might eventually be used to grow human food crops would be of concern. (Isn't it odd, some of these concerns didn't seem to apply directly depositing these diseases & toxics into a already existing known domestic water supply without miles of travel to penetrate that water supply - how are laws allowed to be VIOLATED?) page 190 risk without further disinfection - pasteurization, irradiation - reduction of pathogens - risk unacceptable health risk - prevent use for production of food crops.
DLD - substitute for processing & reuse or disposal of sludge beyond initial digestor stage - pathogen levels are often high
page 19o DLD must be isolated - from any potentially useful groundwater aquifer & be designed to prevent any possibility of contamination of surface water? DLD potential contamination groundwater & surface. pH 6.5 or above could prevent significant migration of pathogens, metals, toxic organixs to groundwater. (sewage reduces pH - DEQ waivering 6.5 pH requirement) Brown & Caldwell report stated migration be known so that no present or future wells be located in path of such a flow. DLD given as greatest pollution. See June, 1979 Progress report stating dedicated land disposal adjacent to lagoon on permanent sludge site??????? WHERE IS THE PROTECTION?
page 191 DLD - 38-40 dry ton year - 10 times agricultural application injecting DLD - result 20 times agricultural rate for nitrate - groundwater beneath DLD - result unsafe levels of nitrate to downgradient drinking water supplies. Must be prevented by locating site where leachate cannot travel to potentially useful groundwater aquifer.

Reading the EIS shows throughout the proof of the potential for contamination of Sole Source water supply for Junction City & us residents if Site "C" or Prairie Road is used. Violation of our Civil Rights? - A septic tank request south of Site "C" and North of Site "C" were denied - yet City of Eugene entering the county received approval of large pits of sewage with toxic, radio-active, heavy metals, diseases from the hospitals to put into the people's domestic water supply? When the city attorney was asked if they would supply clean drinking water to these people after they contaminated their water - the response was NO - that was TOO EXPENSIVE!

The article from the newspaper says "There has been more people killed over water than over women or horses." - Senator of Idaho. Larry Craig - senator

FAA was assured that sewage would not be closer than 8,000 feet from the airport - that would let a narrow strip be used 2,000 feet wide along the railroad tracks to comply with the information given to FAA.??

Bob Shelby was assured that sewage would be covered with water thereby birds would not be attracted to it - what about the 60 to 80 acres of sewage drying beds?

FAA has sent letters to MWMC and Eugene advising not to locate the lagoons on Site "C" or Prairie Road - you are aware of it now if MWMC had not so informed you before by MWMC or Eugene!

Site "C" as stated by Brown & Caldwell cannot take dedicated land disposal - air drying only! Dedicated land disposal is greatest potential for groundwater pollution. Progress Report No. 7, dated June 1, 1979 - page 24 - "Well stabilized sludge from the bottom of the lagoons will be removed for disposal by means of a floating dredge. Sludge will be pumped to adjacent air-drying beds for subsequent agricultural use, citizen giveaway, or landfill disposal. The rest will be disposed of in liquid form on agricultural land or on dedicated land also adjacent to the storage lagoons."

2 dedicated land sites were dismissed near the river for flooding potential - yet MWMC in their meeting minutes statement was made at the commission's option they could be used?? Remembering Site "C" by Brown & Caldwell report cannot be dedicated land disposal only air-drying. The public was never told of dedicated land disposal on "C"!!

I believe FALSE INFORMATION has been presented to the Federal Government to obtain Federal Financing - which is a Violation of Law!

Did Eugene report to Federal Government for Federal financing that they owned the land for the addition to the sewage plant? Did Eugene own Larson property, or do they yet own it? As of September 13, 1982 Bill Larson filed suit against Eugene for the return of his property and damages as Eugene had not paid Judge Allen's decree from 1981 to September 13, 1982. County records were changed to show Eugene the owner in 1980 - as of 5-13-82 county records showed improvements of $35,000,000 on Bill Larson's tax lot. As reported by TV Bill Larson was wringing money out of the city - with 4½ years in court huge attorney fees, jury awarded him about 2/3 of the appraised value as determined by Blinkhorn. I heard another property was condemned for public use for $5,700, that was on county records as being valued now at $150,000.00 - yet trying to sell it for $450,000.00, apparently not having used it for the condemned use?? That property was not condemned for sewage plant - but other public use.

Did Eugene report to the Federal government officials that the treament plant had been in compliance with discharge permits and had no problem complying? DEQ file showed repeated violations from 1969 to the date DEQ and Eugene agreed and signed agreement admitting they would be in violations of discharge from 1977 to 1982 - was that a permit or a violation of law. Also November 1, 1982 when taking us to court to condemn for Agripac pipeline and Agripac last piece of disposal site - Eugene was operating the sewage plant without a discharge permit it had expired, if it was lawful, in 1982 August. In court Eugene showed applying for the permit.

Our land in Site "C" or Prairie Road site can not take more water than GOD gives us of that clean water as rain. Our water wells have been tested and shown to be good water for drinking, but that pollution Eugene plans will destroy all these people's water - if you allow this pollution to take place are you also willing to deposit in the BANK money to give these people to replace A-23 wells if they become polluted or replace their land if those heavy metals and toxins destroy farm land and it can no longer grow their leafy vegetables or raise dairy cattle? If you aren't willing in writing to place that money in the BANK for these people's protection - GOD is WITTNESS!

Questions regarding Sewage proposed for Site "C" or Prairie Road Site- as permanent sludge management site :

1. How can the Violation of Public Law 92-500 and 95-217 be allowed when federal money was obtained from the government to protect the water not polute it?

2. What did the digging of monitoring wells on the additional 125 acres show as to depth of gravel from the surface of the ground?

3. When the lagoons are dug to 5 foot depth in the 125 acre area how many of them would be in the groundwater level of water when dug?

4. Does the report by Brown & Caldwell acturately answer what happens when groundwater is made to become contaminated on pages 3-2-/3-3/3-4 - as indicated in Progress Reports discussing permanent sludge management dedicated land disposal of the remaining sludge adjacent to the lagoons is intended, what are your protections against this occuring?

5. How long is the sewage to be treated in digestors before being stored in lagoons on Site "C"?

6. Was there a Public Hearing on the additional 125 acres added to the Site "C" area?

7. Who initiated the additional 125 acres to be studied in the EPA EIS Draft Environmental Statement?

8. Was there a public hearing on Prairie Road site?

9. What owners of Prairie Road site were contacted about soils samples being taken?

10. What are the results of the Cadmium level in the Eugene/Springfield sewage sludge to be put on Site "C" or Prairie Road in lagoons?

11. Was Mercury or PCB, 2-4-T found in the Sewage sludge to be placed in lagoons on Site "C" or any radio-active readings in the sewage sludge?

12. The movement of water flow in the Site "C" area was given by Brown & Caldwell Krugel as 200 feet a year - how does that correspond to the testing of 440 Million Escherichia Coli bacteria injected into the aquifer on Apr 26, 1979 when observed flow was 20 feet in 3.5 hours?

13. How would you answer the difference in report by Brown & Caldwell as to Cadmium reported in Eugene/Springfield sewer sludge as being tested to 5 - 10 PPM, when sewage sludge from Eugene placed on Marquess farm under sludge agreement contained testing results of 16 PPM - more than twice the amount reported being there in Eugene sludge at that time; since that sewage sludge is intended to go on Site "C"?

14. Did EPA know that the drinking water wells that were tested in the area that were in use reported 0 coliform?

15. Mr. Burd, am I correct in the letter written to me earlier that EPA is the agency providing the funding and is responsible to see that no environmental damage occurs on these projects - or did I misinterpret the letter?

16. Would a third stage treatment plant have made a less hazard of pathogens, microbial pathogens to be put on Site "C" or Prairie Road?

17. Is North Carolina Septage Study accurate that if sewage sludge having been through activated sludge process then land applied might cause endemic or epidemic conditions might occur on Site "C" or Prairie Road - or can you provide a guarantee in writing able to be backed up in court that it won't?

(1)

18. What is the cost of dewater equipment for Site "C"?

19. What is the cost of dewater equipment for treatment plant site?

20. Since you have stated that it is more expensive to place the dewater equipment at the sewage plant we have to know the cost differences - closer to the electrical power and river if emergency overspill - why would it be more costly near power?

21. Was Mr. Pye's statement to MAC meeting accurate when stating it was too late to build in the dewater equipment at the treatment plant it had been built past that point?

22. If your answer is yes to that question~~s~~ it was said in March 1980 or 81 I believe - when the option was presented in letter to cover Bird Strike hazard question as alternative to dewater at treatment plant - how could it have been too late then to build it in - and now it is possible? I further believe Mr. Pye said the plans to dewater at plant would have to have been made before June 1978 to do so.

23. How many persons from FAA by name were contacted about Bird Strike Hazard potential by placing sewage sludge lagoons in Site "C" or Prairie Road sites?

24. Since you have indicated that you will not make sure that mitigative measures are in place - what assurances for Bird Strike Hazard prevention if sewage attracts as FAA believes it will?

25. Are you, EPA, aware that FAA advised the City of Eugene and MWMC not to locate sewage lagoons on Site "C" or Prairie Road?

26. What is the depth of groundwater to surface of ground at Site "C" area at this time?

27. How much clay lining is usually required to seal a lagoon in inches as at Site "C" or Prairie Road?

28. How many inches of clay are indicated in the EIS report intended for the Site "C" or Prairie Road lagoons?

29. Is EPA aware that the Site "C" area is directly over a known domestic sole source water supply for Junction City and residents of the area?

30. Does EPA law allow placement of sewage ludge with toxics, microbial pathogens, diseases, mercury, cadmium, chromium, arsenic, selenium, PCB directly into a known city's water well supply?

31. Can sewage sludge being put or planned to be put on Site "C"be considered nonputrescible? Doesn't B&C report indicate further treatment of sewage by lagoon storage further stabilization?

32. Was EPA aware that FAA was informed that Site "C" sewage sludge was to be nonputrescible - wouldn't that indicate that it would not decay or further degrade?

33. What would make soils at Site "C" area that Eugene has stopped residents of the area north and south of site refused a septic tank approval because it would contaminate the groundwater - be able to be approved for lagoons dug below the groundwater level with known toxic, pathogen, diseased, industrial toxics possible radio-active (stipulation handed to us in court Nov 1, 1982) be possible to be handled by this same soil?

34. Is EPA aware that any sewage placed on Site "C" area would be in violation of EPA law regarding Bird Str[illegible]azard potential - Southern Pacific railroad at east side of site is 10,000 feet from airport by Brown & Caldwell report?

8

35. Was EPA aware that the public had not been informed at public hearings about the additional 125 acres being added to Site "C"?

36. Did EPA Seattle know that dedicated land disposal as indicated by Progress Reports for permanent sludge management had not been brought to public hearings on Site "C" or Prairie Road site?

37. Was it indicated that dedicated land disposal of sewage sludge from Eugene and Springfield could not be taken to Short Mountain landfill after 1989, if so did that mean dedicated land disposal would be placed on permanent sludge management site decided on by EPA?

38. As I believe in the EIS concern for the game animals if sewage sludge with pathogens were in place on forests, where is the concern for a known domestic sole source water supply with those pathogens placed directly into the lagoons into that depth of groundwater at first introduction of diseased, toxic sewage?

39. Would you please provide the names of the farmers wanting the sewage in the area of Site "C" or Praire Road as indicated at the public hearing, and was that list of farmers sufficient to obtain 10% innovative and alternative funding?

40. Has any of the toxic, dioxin industrial discharge been placed into the sewage sludge that is planned for Site "C"?

41. Is there any safe level of Cadmium and what effect does Cadmium overload on a human body show up as?

42. Is there any connection points between the planned Site "C" sewage pipeline and the already installed Agripac pipeline?

43. Evidence has been given in forming decision for Site "C" regarding a 70 mg/l nitrate reading found south of Site "C" area - where is that location indicated by DEQ - was it the cause for the moritorium of this area?

44. Was the location just asked about the same location of injections of high ammonia nitrate loading to aquifer on April 12, 1979 and doubled dose Apr 30, 1979?

45. Was EPA Seattle aware that the Gary Lewis Prothero Thesis showed uptake of heavy metals from Eugene Sewage sludge from treatment plant site - same sewage intended for Site "C" or Prairie Road?

46. Drainage is indicated flowing from the Prairie Road side of area through the Site "C" site - won't the drainage be blocked by the construction of the lagoons berms as Agripac site blocked drainage which caused Lane County road department to be concerned for road bed softening?

47. Not only the blockage of normal drainage - but contamination introduced to that Site "C" would be intermixed with the groundwater of area by the action of the pumping of the railroad when washing machine action of the train tracks take place - wouldn't that intermix the groundwater with contamination all directions by that adgitation?

48. As our house has cracked windows and plaster from the railroad vibrations how is that movement going to affect sewage lagoon clay lining?

49. As per your EIS report - was the indication that Site "C" lagoon liming would be 6 inches of clay lining instead of 12 to 18 inches indicated at public hearings by Krugel?

50. What protections is EPA willing to put in writing for Junction City's water supply and ours of the residents living around Site "C" or Prairie Road and that our land won't be contaminated by thiA-26 manent sludge management site storing Eugene-Springfield's industrial toxic, diseased pathogen sewage sludge with heavy metals and that our water won't become contaminated by this sewage project?

[illegible]

a e 1. From your EIS report seems it's not OK to use sewer sludge as a soil conditioner in the city except very limited use - but a farmer is supposed to put the sewage on his land repeatedly for years as a soil conditioner and EPA and MWMC thinks its OK, is that true?

d 2. Do you believe city people can be sickened by effects of sludge where the farmers won't? Most city property is not used to raise leafy vegetables and summer vegetables such as a farmers land is expected to do. What do you believe will be the total amount of land required to take out of human food production to use it for a sewage disposal to handle all of Eugene's sewage needs for the next 20 years - the TOTAL ACERAGE?

e 3. In EIS mention was made where city users of sewage leaching of sludge constituents into the groundwater - but city has piped water supply no potential for contamination of their drinking water. What about the farmer's family water supply with sewage leaching into their only source of water? What protection have you written down to protect the farmer's water or land or health?

C 4. Is Site "C" the only site that was notified by the county for a public hearing on conditional use? Was Coburg Site considered for a conditional use? Was Prairie Road Site considered for a conditional use?

⑩

B 1. What other alternative has the EPA been presented by the MWMC or Eugene to study or consider other than composting? Were any other alternatives ever mentioned that had been presented to William Pye to be considered in sewage sludge treatment?

B 2. Statements have been made of energy recovery - please explain - if only 11% of plants energy can be reclaimed out of the methane produced? Wasn't it told to the public that the Brown & Caldwell new idea of activated sludge - would take 1/2 the energy that the trickling filters took? Why the extreme amount of electricial energy demanded by this Brown & Caldwell plant now that it is being built?

B 3. Industrial pretreatment was to remove the heavy metals and toxics wasn't it? So that there would be no pollution discharge by 1985 - are you considering that by putting that pollution of heavy metals on the farmers land and water you have met 1985 deadline? We asked if MWMC had checked with other towns that had pretreatment programs and I believe the response was they hadn't. Has the pretreatment program been implemented and if so, where is the heavy metals and toxics going now? Where will they be going when sewage sludge is put on a permanent sludge location?

B 4. Have you used the initials EPA so long you forgot what they stand for? They are to protect the environment of other people besides the city of Eugene - the ones you choose to dump on!

BROWN AND CALDWELL
CONSULTING ENGINEERS

D. H. CALDWELL, PE Chairman
T. V. LUTGE, PE President
E. F. MISCHE, PE Exec Vice Pres
D. P. NORRIS, PE Vice Pres

December 19, 1983

Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, Washington 98101

13-112-82

Attention: Ms. Norma Young, M/S 443

DRAFT ENVIRONMENTAL IMPACT STATEMENT ON THE METROPOLITAN WASTEWATER MANAGEMENT COMMISSION'S SLUDGE MANAGEMENT PLAN

On behalf of our client, the Metropolitan Wastewater Management Commission (MWMC), we have completed our review of the Draft Environmental Impact Statement (DEIS) on the MWMC Sludge Management Program. In addition to and in support of the comments we conveyed to you in our meeting of September 22, 1983, the following comments are offered:

1. On pages 9 and 154, the DEIS states that no airports are within 10,000 feet of the Coburg site. It should be noted that three private landing strips are within 6,000 feet of the site, although they are used infrequently.

2. On pages 10, 12, 18, and 158, the DEIS states that Site C is prime farmland. The soil types found on Site C include Awbrey Silty Clay Loam (SCS 280 A, Capability Class IV w) and Coburg Silty Clay Loam (SCS 270 A, Capability Class II w). A small portion of the entire tract consists of Malabon Silty Clay Loam.

   Prior testimony at the Industrial Triangle public hearings in December 1979 by Mike Stoltz of the Lane County Extension Service indicated the tract must be farmed as Class IV wet lands because of the combination of soils found on the tract. Thus, in reality the property is hardly prime farmland, although it is comprised of Class II soil in part.

   Although Coburg Silty Clay Loam is listed as prime farmland, the working paper on agricultural lands recognizes that some soils which would otherwise qualify as prime farmland

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may be excluded as prime farmland when there is inadequate drainage. (Working Paper: Agricultural Lands, Lane Council of Governments Research Division, November 1981, pages 10-11.) Thus, it is not unreasonable to exclude this property from the inventory of prime farmland, because its mix of soils dictates that it be farmed as if it all were poorly drained.

3. On pages 13 and 114, the DEIS states that with dewatered sludge there is a lower chance of metal contamination than with air-dried sludge. We believe this is untrue. Although application rates are lower with dewatered sludge because it has a higher nitrogen content, the sludge is spread over more land and the same mass of metals is applied.

4. The summary of Alternative 3 on pages 13 and 14, as well as later discussions in the text, does not mention the land resource impact of using up the landfill sooner. We believe the DEIS also greatly underestimates energy use, failing to account for energy used for dewatering chemical production and for treating recycle loads.

5. On page 15, the DEIS states that the impact of the "no action " alternative on surface water is unknown. If it is truly a "no action " alternative, it is clear that major degradation of effluent quality would occur as a result of inadequate sludge handling capability.

6. Page 19 does not mention that the use of the Coburg site would require longer haul distances and probably would require trucking through the town of Coburg.

7. On the bottom of page 40 the word "conditioned" should read "thickened."

8. The discussion of the clay liner on page 84 should refer to "a minimum of" 6 inches as the thickness of the clay liner.

9. On page 84, the DEIS states that ammonia-nitrogen moves rapidly through the soil. We disagree. Ammonia-nitrogen is fixed or adsorbed to clays and organic colloids in the soil. This is the primary reason why little ammonia is found in groundwater under septic tank drainfields. The ammonia is retained in the soil until it is nitrified.

10. On pages 86, 95, and 111, it should be noted that since a dual force main will be constructed, if a leak were detected in one force main it could be taken out of service and the other used until the leak is repaired.

11. Page 168 does not mention energy use for polymer production and recycle treatment with the mechanical dewatering alternatives, nor does it relate the large amount of energy saved by replacement of commercially produced fertilizer when sludge is used for agricultural purposes.

12. On page 188, the DEIS states that from the standpoint of pathogens, use of composted sludge would be safer than air-dried, liquid, or mechanically dewatered sludge. We disagree. We have found that long-term storage of sludge in a facultative sludge lagoon results in pathogen die-off comparable to that found in composting.

We appreciate the opportunity to comment on the DEIS. Please call me if you have any questions regarding these comments.

BROWN AND CALDWELL

Steven J. Krugel

Steven J. Krugel
Project Manager

SJK:drc

cc: William V. Pye, MWMC
Arl Altman, BCS

Dec 4, 1983

to: Norma Young M443
EPA

re: sludge disposal for the
Eugene - Springfield sewage plant

I would like to express my concern over the possible location of the above at either "Site C" or "Prairie Road."

In reading the EPA report there are three major issues to consider;

1. Both locations are within 10,000 feet of the Eugene Airport and there would be increased danger because of bird population.

2. Possibility of contamination of wells in Junction City.

3. Odor would be evaluated *after* the plant is in operation. The graph in the

study suggests a nuisance up to a mile "at times." Unfortunately, the Willamette Valley has more than its share of temperature inversions and under these conditions, the nuisance will carry much further. Hydrogen sulfide and the organic sulfur compounds known as the mercaptans, are detectable at very low levels.

The Bel Estates and Lynwood are located between 1-2 miles from the proposed sites, downwind from the prevailing north wind.

Any one of these problems could result in serious legal implications for the water board and I urge the EPA to weigh them carefully before approval of either site.

J. Kyle Clinkscales Jr.

J. Kyle Clinkscales, Jr.
4876 Futura St.
Eugene

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DEC 8 1983
ENVIRONMENTAL EVALUATION
BRANCH

12-10-83

Dear Norma Young,

This letter is in regard to the proposed sludge lagoon project.

We very much oppose the Prairie Rd. site, site C, or any other site. We feel this way of sludge disposal is unsafe to the soil, water, air, and people living in the area of a project such as this.

We also think it is very unfair to force "non using communities" to have these lagoons in there back yards, so to speak. They (Eugene and Springfield), should keep there problems in their own neighborhood, NOT dump it on there neighbors.

There should be other methods to dispose of the sludge. We think burning it would be the best solution to their problem, and doing it in their own community. Maybe it would cost a little more, but it would be a safer, healthier route, that the people who use it could pay a little more for.

This project would also waste alot of prime farm land. Once you loose this farm land, it can not be classed as prime farm land ever again.

We do hope a decision is made, that some other form of slude disposal is necessary, rather than the lagoon method.

Sincerely,

Mr. & Mrs. William Cook
91634 Prairie Rd.
Junction City, Ore.
97448

Robert E. Dooley.
90681 Link Road.
Eugene, Or. 97402

Oct. 26, 1983

To Whom it may Concern,

Circa 1965 I paid a fee and was instructed by the sanitation Dep't of Lane Co. To dig three soil absorption test holes for what I hoped would be approval for a Septic tank installation. The site I had chosen was just South of Aubrey Lane. - approval was denied due to this departments Claim of high water table.

A short time later I went thru this very same process on a site just North of Meadowview Road. The old Meadowview School property to be exact. I was denied septic tank approval again for the same season -

I Can't understand Why my requests were denied - and yet The M.W.M.C. feels this is an ideal location for their Sewer sludge lagoon and drying beds etc. - This is What they refer to as site C - Which lies approx halfway between Awbrey Lane and Meadowview

I voiced my opinion on this at an early public meeting - and Was amazed to read in the Eugene Register Guard that one of the M.W.M.C.'s members stated that our claims and testimony Were unfounded and not worth investigating.

Sincerely

Robert E Dooley

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21 1983
ENVIRONMENTAL EVALUATION BRANCH

Eugene, Oregon

December 18, 1983

Norma Young M/S 443
Environmental Evaluation Branch
Environmental Protection Agency
1200 Sixth Avenue
Seattle, Washington 98101

Comments re Environmental Impact Statement re Metropolitan Wastewater Management Commission Sludge Management Plan Eugene-Springfield, Oregon

I think H. J. Buttner's sludge dryer hooked to the O'Connor combustion boiler is by far the most practical and cost effective solution to our sludge disposal problem at the Eugene-Springfield Metro plant. Buttner estimates 1/4 acre of land will accomodate the units for the whole Metro area. (Eugene owns enough land at the Metro plant site to double their treatment capacity) I've been told it will produce roughly four times the amount of steam energy as it takes to dry the sludge down to 50% moisture where it burns odor free and all the emissions therefrom are way below Contra Costa County's (California) emission standards which are lower than E.P.A.'s. I am told detailed information about it has been sent to you.

I'm anxiously awaiting Buttner's development of a smaller size model which I can use for my Angwin, California shopping center and adjoining developable land that at present has no public sewers. I've been interested in alternative sewer systems since 1968 and this is the most practical solution I have found.

Whether Buttner's dryer-boiler is used or not at the Metro treatment plant I believe the Avon Babb families's land and their Delta Sand & Gravel Co.'s pits directly across Beltline Highway from the Metro treatment plant has many options and advantages now and in the future not available at any other location that has been proposed or about which I have knowledge.

I've been around this area about 65 years and been interested in development since 1960 and attended almost all the M.W.M.C. and M.A.C. advisory commission meetings since their inception, and others before them, and other related meetings.

The Babb family have approximately 500 acres of level land (gravel pits, gravel resource land, orchard and farm land) from Beltline Road north to the confluence of the Willamette with the McKenzie Rivers, about 1½ mile north of Beltline Hwy. with a dike and roadbed on top of it for about 3/4 miles. It is better protected from a 100 year flood than the Metro treatment plant or the land on the east side of the Willamette River.

Lee Babb has told me the pit adjoining Division Ave. and Beaver streets directly across from the Metro plant is about 85-90 feet deep and it is still cemented even in the bottom and up the walls to within about 15-20 feet of the top and it is about 99.98% water tight where it is cemented. They have to use a power shovel to dig it loose and then crush and wash it before it can be used. All their roughly 100 acres of gravel pits are about the same and are cemented. I think if a bench was dug around the pit with an open trench in the top of the cemented layer the surface water could be directed around the pit and pumped if necessary into an adjoining pit, lake or the river.

Large holding reservoirs so close to the treatment plant could hold the flow during a malfunction at the treatment plant and peak flows, and then be pumped back across Beltline for treatment as desired.

I would like to see a Hercules, California type Solar aquaculture green house type plant tried on the Babb property that could recycle most of the waste and be pure enough for at least industrial reuse or to recharge the ground water. The fish in the lagoon could also recycle food waste from the larger food processors, restaurants, etc., in the area. The Babb property is at the Division St. exit from the Beltline 4-lane Highway about 4 miles from downtown Eugene. I have seen information from knowledgeable engineers that Solar heat will work even north of our latitude at Eugene in a plant of the Hercules type, contrary to what some less informed people say.

It is my belief that even the much more cost effective (capital cost and operation and maintainence) overland flow type plant the WMWC engineers first recommended for the Agripac plant could have been located on Babb's property with several miles shorter pipeline and less damage and maintainence, not being subject to the vibration from S.P. trains and trucks on the Northwest Expressway on each side of the pipeline and also the projected parallel pipeline route to Site C or the Prairie Road Sludge disposal sites MWMC prefers. Even the sludge disposal sites would be more cost effective and environmentally safe at the Babb site. Even if a 100 year flood washed out the dike it would be close to the river with much swifter flowing water, much greater dilution factor, further from developed land, and on mostly gravel resource land instead of good crop land. Any discharge to the river at the north end of the Babb property at the confluence of the Willametter and McKenzie rivers would give a lot better dilution of the discharge.

Babb's location is a choice commercial or industrial site if the buildings were built on tops of concrete vaults above the 100 year flood plain. Even if the dike should wash out the river wouldn't damage or move the large concrete tanks on a cemented base full of liquid, sludge or anything else.

The view of the river nearby would be an attraction and the sand, gravel and concrete for construction would be a very short haul. The land would then be reclaimed and very valuable to compensate for any extra cost for the foundations or supporting pillars in the concrete tank. Odors could be a lot less offensive than those from the new Metro treatment plant across the road.

If you have any questions or would read more of my suggestions let me know. There is a lot more I would like to say. I'm always told to be brief, and that is extremely difficult for me.

Sincerely yours,

Gordon W. Elliott

GORDON W. ELLIOTT
938 Jefferson Street
Eugene, OR 97402
Message phone 686-0905

12-6-83

JOYCE M. ENGELS
90564 LINK RD.
EUGENE, OR 97402
689-1630

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BRANCH

I realize that human waste must be disposed of somehow — some way. But, I would like to address the issue of how a sludge lagoon in my personal environment is going to affect me, personally.

I can not deal with the fact that a sludge lagoon is going to be put near my home. Invading my personal "Castle." The place I am the most comfortable, the most happy, and that nobody that is in charge of planning this site CARES. Who cares if I am distressed? Who cares if my home that I love, will be invaded by noxious orders, invading my nose? Nobody in the D.E.Q. or M.W.M.C. cares. Nobody in the Oregon Senate cares. Not even the Governer cares. Who am I in the scheme of things? Well, I am a human being, a tax payer, a law abider and a caring person, and I care. I care about me, my family, + my neighbors. I care that a sludge lagoon could be put on site "C".

Joyce Engels

REF: EUGENE/SPRINGFIELD, OREGON — SLUDGE TREATMENT FACILITY

DECEMBER 15, 1983

ENVIRONMENTAL PROTECTION AGENCY
1200 SIXTH AVE:
SEATTLE, WASH. 98101

ATTN: NORMA YOUNG M443, ENVIRONMENTAL EVALUATION BRANCH

■ NEED FOR FACILITY HASN'T BEEN SHOWN! EUGENE/SPRINGFIELD HAS SLOW OR NO-GROWTH TENDENCY — DUE TO SEASONAL TIMBER-BASED ECONOMY.

- ● NO NEW MAJOR INDUSTRY MOVING HERE IN FORSEEABLE FUTURE (FANTUS REPORT 1982) BECAUSE OF OREGON'S CORPORATE TAXING STRUCTURE
- ● NO ADDITIONAL DEVELOPED OPERATING REVENUE BASE (OTHER THAN) EXISTING HOMEOWNERS — ALREADY TAXED TO UPPER LIMITS OF ABILITY TO PAY)

■ FUTURE CLASS-ACTION LAWSUITS ARISING FROM INEVITABLE GROUNDWATER POLLUTION IN WELL-ESTABLISHED SANTA CLARA/JUNCTION CITY AREA MAKES:

- ● COBURG AREA (SPARSLY POPULATED & ALONG HEAVILY-TRAVELLED MAJOR NORTH-SOUTH I-5 HIGHWAY SYSTEM) IS BEST SHORT & LONG-TERM CHOICE BECAUSE:
  - ● SHORT HAUL TO CHOSEN SOLID LANDFILL DISPOSAL AREA (SHORT MOUNTAIN LANDFILL) ALONG MAJOR HIGHWAY SYSTEM — HELPING TO ELIMINATE DETERIORATION OF SECONDARY ROAD SYSTEM IN SITE C - SANTA CLARA AREA.
  - ● EASY/ECONOMICAL ACCESS FROM TWO DIRECTIONS COBURG LIES BETWEEN BOTH EUGENE & SPRINGFIELD; WHEREAS SITE C-SANTA CLARA LIES NORTHWEST OF BOTH CITIES. PREVAILING WESTERLY WINDS WILL DISTRIBUTE STENCH OF FACILITY INTO EUGENE/SPRINGFIELD AND SANTA CLARA CITIES.
  - ● SHORTER (& CHEAPER) PUMPING DISTANCE THRU FORCE MAIN TO COBURG.
  - ● FLOODING DAMAGE LESS IN COBURG THAN IN HEAVILY DEVELO SANTA CLARA

■ GLOBAL WEATHER CHANGES ARE HAPPENING NOW

(OVER)

(PAGE 2)

▨ GLOBAL WEATHER CHANGES HAPPENING NOW

- FLOOD PLAIN: SITE C - SANTA CLARA LIES IN 100 YEAR FLOOD PLAIN - COBURG DOES NOT.

- GLOBAL FLOODING GIVES RISE TO CONCERN OF IMMINENT FLOODING HERE IN WILLAMETTE VALLEY

- EARTHQUAKE HAZARD:

  PACIFIC COAST TECTONIC PLATE (FAULTLINE) RUNS FROM BAJA, CALIFORNIA TO SEATTLE & NORTHWARD THRU THE WILLAMETTE VALLEY — AND SITE C!

- AGRIPAC'S NEW DAM (SLUDGE LAGOON) RISES 30' ABOVE FLOOR/GROUNDLEVEL OF WILLAMETTE VALLEY FLOOR.
  ONE SMALL EARTHMOVEMENT = FRACTURED DAM LEVEE = DISASTER LOANS & POSSIBLE RELOCATION FOR 100'000 PEOPLE

▨ DIVIDE THE RISK & ENVIRONMENTAL STRESS BETWEEN TWO LOCATIONS

- COBURG — PRIME CHOICE
- SITE C — SECONDARY CHOICE

THANK YOU

Larry O Engels

LARRY ENGELS — THRESHOLD DESIGN LAB
90564 LINK DR. (INDEPENDENT INDUSTRIAL DESIGN FIRM)
EUGENE, ORE. 97402

Junction City, Ore
Nov, 3-1983

Norma Young
E.P.A.
Seattle, Wash.

I have read portions of your E.I.S. Draft and it has not convinsed me why the Cities of Springfield and Eugene should be allowed to dump their human waste in our yards.

The City of Eugene is now in an economic slump and ~~are~~ is seeing some pretty hard times.

It does not take a large book of facts such as your E.I.S. to figure out why: facts and figure and the "Hell" with any body. They have made made so many enemies and irritated so many people that I, as are many others do not care to have anything to do with them.

They have spent millions of dollars of tax payers money for projects which are inconsistent with good judgment.

How can you justify your decision to allow M.W.M.C. to deposit their sludge in this area, without considering the impact on those of us who live in this area? If you were one of us would your decision be the same? Isn't there a greater decision based on human decency to be considered as well as all of your so called facts and figures? The one fact of human decency & fairness stands out as far more important than you entire books of facts which you know and I know were slanted, atleast to some extent to favor the project

Those of us who are opposed to the location of this project have found many statements by those in authority in M. W. M.C. to be absolutely false beyond a doubt.

I had an ocassion to remove some P-V.C. pipe which had been underground for atleast ten years and not more that fifteen upon contacting the pipe very slightly with the shovel it immediatly broke into small peices; is this what you allow to prevent seepage from entering our wells?

The City of Eugene is creating their waste it should be their responsibility to dispose of it in such a way as not to seriously effect others.

4

In the name of human decency I urge you to consider another location for the M.W.M.C. sludge site "C".

Yours truly.
Ernest J Garrett.

P.S. I am a farmer and I am sure that I do not want any sludge dumped on my fields. I have talked with a number of farmers and their opinion is the same as mine.

DEC. 14, 1983 1.

Norma Young M/S 443
Environmental Evaluation Branch
U. S. E. P. A.,
1200 Sixth Ave.,
Seattle, WA 98101

RE: EIS per Eugene-Springfield-Lane County Metropolitan Wastewater Commission plans

Dear Ms Young:

I would hope that the enclosed personal views per the MWMC plans will be considered in the decision to be made as to funding, and the choice of site location. I was ill at the time of the Dec. 6th hearing at Springfield, and unable to prepare a statement in time to be read, vocally. I appreciate the timing of this hearing, staged between Thanksgiving and Christmas, the worst possible time for most of us, but that is expected when public input is not very desirous--especially when it is negative in the majority.

I am a resident, living North of the "Prairie Road" site directly, and adversely affected by any possible water-table change or contamination from both it and "Site C"--and even more so, due to the acquifer flow direction, by the under-construction "Agripac" site. The latter was once the farm of my grandfather, purchased by him in 1900. I and my father are both retired, now, and we only have 1.3 acres, but it is "home." Father has resided most of his life here, and I since 1936. Having farmed here, we both know all the nuances of farming, the topography, and the ground and acquifer (water) assets and problems. In recent years, since this plan first became public knowledge, I have been involved with several groups opposing it. I still oppose it. Even more since, as a director of the pioneer Luper (Irving) Cemetery board, I was, with the "unknown heirs" of three early settlers, condemned so that MWMC could take our deeded roadway, purchased over 100 years ago. In an action still deemed "unusual", "we" were included in the condemnation of the properties owned by Donald and Joseph Cersovski, and families. The City of Eugene did the job on us, as a representative of MWMC. I might note that the condemnation suit wording as to the REASON they had to take all of these properties (some 9 parcels are involved) was that they had the right (?) to take it, and that they planned erecting a facility with which to process "agricultural, industrial AND SANITARY SEWAG wastes." At the time of the 2nd of these suits, they introduced into the court a new "interpretation" of what "SEWAGE" WAS--including solid, gaseous, and radioactive waste matter. This AFTER acceptance by EPA & DEQ hearing processes. Now, the plan and facility use does not comply in anything but site with what was considered by the so-called "protection agencies." Due to the many changes and marginally legal actions, I finally was forced to hire a lawyer, thus this process is, and has, been a constant financial drain. When it was illegal, or blocked by a regulation or statute, they (Eugene, Lane County Depts., and MWMC) had them changed or set aside. Now, they have the power of "quick-take," and most of us have run out of money. It is ill advised to try and figh your own tax moneys, especially when the agencies designed to prevent it do not address these irregularities. The EPA is among those whose actio s are a disservice to their meaning and objective. Non-action is included

But--I digress---As a lad I worked for the former owner of the two sites at this location, during the Summers in harvest, and in Winters plowing, levelling, and planting. Thus, I and my father have an intimate knowledge of both soils, problems, and advantages. I deplore the lack of actual farming knowledge among the heads of agencies which have the pow to affect the very lives of those whose lands' decisions are made or modified upon.

Of the proposed site locations, I and all I know oppose all but one of the "alternatives." I cannot say much about the "Coburg Hills" site as it was never introduced publically until this EIS was required. As a matter of fact, neither was the "Prairie Road" site, until FAA guidelines came into the picture as per distance, when one of the Advisory Council had accepted a flip comment by Steve Krugel, engineer with Brown and Caldwell as a useful consideration. Since, it has apparently come into the running. This council was, as was the 1st advisory council, dismissed by MWMC--rather, MOST were, when the present MAC was formed, with a majority being City, or County employees or consultants, thus assuring for a time at least that no more objections to MWMC's plans would be faced, by having a majority at all times. I will state for the record that the MAC has, in the main, performed outstandingly well in formulating an industrial waste program. Not that it will ever be implemented, but it is a good base upon which to validate restrictions on industrial users of the system. I have reservations and oppositions to all the OTHER plans which arose from MAC since...and before. (Excuse the typing--the "e" has come unsoldered.)

Alternative IV ("No Project) would be personally preferred, but is an obvious ploy, and therefore unacceptable. It is not my intention to play games with a problem as direct as this one is. Being one of those directly affected by the actions of alternatives (phase two) which are of value, I cannot supply affirmation for any but Alternative III--and base this on the prior study done by a firm still used in various ways and areas now by MWMC--CH 2 M Hill. Comparing these two studies, the prior one having been thrown out due to lack of public "input," I see too many variations between the graphics and the technical input of the studies to validate the later conclusions by Brown and Caldwall's many studies. The prior study indicated that the draft (final) by MWMC has been prepared using altered facts and figures. In plain language, too many "sharp pencils" have changed marginal areas into acceptable ones, and poor ones into "useful" ones. You have the copies, and I submit you are remiss in not calling these flagrant changes of data in order to reach the conclusions that MWMC WANTS. It is unfortunate, but true, that if one hires a consultant (?) --I use the term with tongue-in-cheek, as I do not often agree with these so-called "experts"--one can get the answers requested...one way or another. But--to carry into the heart of the matter: I feel the EIS is exactly what it was intended to be, the result of hired "consultants" to summarize the data submitted, with it's impacts. Unfortuantely, when you start with misleading data, your conclusions are bound to be erroneous. Let us take the main area of controversy: "Agricultural Use of Sewage Sludge" as fertilizer for farm use, and the need to have it near the lands where it will be utilized, if at all. Again, you have to BE a farmer to know that it cannot work, nor will it EVER, as farmers cannot utilize anything that low in nitrogen profitably, and due to the weather factors, and haste required, cannot be expected to accept it except on "call." Then again, it has been said that by spreading it on grass crops it will not get into the food chain. I submit to you that there has been and will continue to be use by farmers of grass straw as supplemental feed/hay --which can enter the food chain via both milk and meat. I feel that anyone who now uses this, or plans on using it, not only does so out of greed, or for some other hoped-for profit motive. When "sludge" WAS available at the River Avenue plant, meticulous records were kept. I studied them for a two year span, and the most ANY "farmer" took was a pickup load, in contrast to statements by MWMC's manager, William V. Pye...those are

--or were, available to verify my statements, should you be astute enough to check them. I am not sure, but suspect the most recent statements that "22 farmers" (Mr. Pye) are interested in applying the sludge may also be a fabrication. I leave that up to you, as Mr. Pye rarely opens himself up to public question now. Now to facts and figures --which are as strong AND as frequent as applies the drawbacks of this "product."

ONE

The use of sewage sludge for agricultural use, or as fertilizer for other areas of use, as timber, forest, or nursery use is not recommended at this time, though it may be in future. One nurseryman (name on request) who got a small amount of it to experiment with, found to his dismay when mixed with potting soil, and watered, it became like solid cement. Just one example, I grant you, but most are afraid to use it, after seeing the releas they have to sign to obtain it.

A. Farmers will not be bothered with anything this time consuming and low in needed nitrogen.

B. Scientists, and agronomists, still have concerns about the long term hazards of sewage sludge, depending on it's content and use. (See Dr. Darrell Turner's data, W.S.U. soil scientist, Salem "Capitol Press" of wk of 19-25 Aug., 1979; Oregon State Univ. Extension Service Special Bulletin #499 (page 24) and the "Combined Studies of the Universities of MD, NJ, CONN, & MASS" (1977) for reservations and warnings about potential hazards to public health.) These studies also note that there would be needed (for a two-stage (limit) application) per each 10,000 persons, 45 acres (to start,) and that "further research is needed."

C. Following this (B.) I submit the statement made in the advisory committee meeting of Steve Krugel, engineer for Brown and Caldwell, that (June 10, 1980) "WE WILL NEED 3,000 acres as backup land" (for agricultural use/application TO START.) The proposed 208 plan for the year 2040 regarding land uses and needs by then is graphic in noting some 10,000 acres will be needed (and is outlined) North of Beacon Drive West, and an additional 1,900 acres in the "Industrial Triangle"--thus taking from farm and/or industrial use and tax-personal use-production this much... at a time when both Eugene and Lane County are "looking" (?) for additional lands of 100 or more acres to that end. This does not make sense, in the overall view....but then, sense is secondary as motive, in this pla

D. The major problem with this "product" is it's overabundance. Landfill dumping will have to continue in any approved alternative --perhaps not by choice, but until better methods of handling are found, which ARE "safe." The plants of near-conformity in Oregon are those in Salem and Portland. They too have no adequate alternative. They simply produce more sludge than they have suitable agricultural lands upon which to apply it. Portland suggested barging it up the Columbia River to Morrow County, which perhaps solved THEIR immediate problem, only to compound it in Morrow Co. Salem is no better. Refer to "Sunday Oregonian" July 13, 1980: "Cities worrying as sludge piles up" (Portland and Salem); "Reluctance of farmers and growers to use sludge; " and "Del Monte refuses crops grown on lands where sludge was applied."

E. Obviously, if this alternative is expanded, it means either farmers or "dedicated" lands will have to be utilized. As of May, 1982, signatures of 63 farmers, large and small, were obtained in areas surrounding these "alternative" sites nearby, pledging that they would NOT apply it on any of their 12,415 acres. For obvious reasons, again.

F. Dedicated lands become "white elephants" and a source of an answer, but this method, as in Sacramento, CA (where agricultural use is banned) is non-productive and costly. Should Oregon follow in this restriction, and there are those lobbying for that type of legislation, it would be, as these facilities, a loss. Losses are not unknown to Lane County, as the Solid Waste Facility, which is to be scrapped after years of controversy & great losses.. for the "plans" failed to pan out.

If the foregoing factors, all negative overall, affect such an installation, one might ask WHY they continue with it? The answer is simple, yet complex, as too many officials are embroiled, along with the offer of too much money. As one former MWMC member (and EX-County Commissioner) stated at the 1980 Lane County Fair "I don't GIVE a Damn what they do with the sludge, so long as they get it out of Eugene and Springfield." This is the obvious reason for carrying this fiasco ahead, to remove the problem from the "Metro" area and put it in an area of low population. In other words, "Damn the residents, as long as WE get rid of the (visible) problem." And that is just how WE see it in the main. Never mind legallities, change the laws if they hinder us, and the zoning regulations, if THEY slow us down. This they have already accomplished, with not a little angry opposition. To sum it up, the "product" is in overabundance, the money was slow in coming, so the plant was "compacted" and some facilities for processing were cut out--leaving a plant that cannot adequately EVER handle the sewage that has been projected (which, by the way, is already over projections in Springfield's plant, passing the 1985 figures during an accident which was measured by the DEQ--exceeding 1985's projection now, what will it be NEXT year?)

Now to some of our personal concerns: The attitude and the methods by which MWMC has reached the present point of getting the problems they have shifted over on to US; lies, fabrications, violations for both the EPA and the DEQ guidelines never acted upon, as well as state laws... and, in particular, one law which refuses anyone or any commercial firm contaminating, or planning to contaminate, any single-source supply of water, which means US. Our only access is our present acquifer, and the rain. Most of us have shallow wells (under 90 feet) in the farm, rural, suburban, areas, and deep wells in the cities, as Junction City's. How can the EPA even CONSIDER a plan that will, as the MWMC engineers project, contaminate "northerly wells?" Leakage or seepage, or even leaching, is possible from lagoons , and especially, drying beds, and the scientists are ALL consistent in their views that the agricultural use of sludge or sludge facilities are prone to health hazards in areas of "HIGH YEARLY RAINFALL." That's us, again! (This year we have already exceeded 5 feet--only one year of three to meet or nearly meet records---and this year IS the record in 90 years of measurements.) I was not at the EIS hearing, but caught part of a statement by a man at that hearing on TV--in which he said that (wording may be inaccurate) "the study was in result of concerns by the public, and it enlarged the picture to focus on determination of which alternative would best serve the MAJORITY." If this IS the objective, and funding will be made on the basis of the plans OTHER THAN ALTERNATIVE III, I feel EPA needs to take a good look at it's responsibilities. After all, MOVING a problem is not a valid reason to be given Federal Funding, and only tends to shift the burden from one area to another, and solves NOTHING! How, in all good conscience can EPA fund this fiasco? In fact, considering the applications already made, do they actually comply with a validity that prior grants afforded? In other words, I would ask for a "refund" if what we have seen is said by MWMC to BE a valid program. If this cannot be done, then go with the "No Project," and prevent further losses.

As to "determining" who is to gain, TWO and who is to lose, (benefit) I am not sure that I want to LET ANY GOVERNMENTAL BUREAUCRACY make such a decision for me. What ever became of our "rights" under law? This eventually will affect the environments, lives, and more for 30,000 people living from the planned facilities North the Monroe and Junction City. To date, it's only a THREAT. The threat is REAL, and if "Metro" wants to dump their problems on US, Only YOU stand in their way. Without the FUNDS, they will handle it as it SHOULD be handled, by and for themselves.

TWO--(Con't)

ON TV, Recently, the HEAD of the EPA was questioned on matters concerning industrial waste storage problems. He stated that there was NO way of protecting completely any such man-made system, and that there IS no "fail-safe" laggons" to his knowledge.

A There is no present need for "sludge" as an end product.

B Landfills should be used and checked for any leaching.

C Adequate and suitable areas for expansion were found to be easily obtained in the CH 2 M Hill study ON THE SITE (present RWTP) The later study by Brown and Caldwell noted some area owners did "not wish to sell" their land. So how come WE get condemned and they do NOT? We don't want to sell EITHER! Inasmuch as elements of the planned facility, as the centrifuges and clarifiers (they brag about that "saving,") have been removed from the plan, they have THAT land upon which to erect the facilities they want to foist on US.

D There are NO "failsage" monitor processes. What we have seen, and have documented, are sludge drying beds overflowing on to adjoining lands, a lack of any lagoon sludge/liquid (1979--after the wettest August on record)-and three MONTHS after the last dried sludge was taken to the landfill at Short Mtn., and the hauling equipment was sold, there is no question about what 3 months of build-up did--it pumped itself over the edge of the lagoon via an 8 inch pipe and pulsating motor, into the Willamette River? (DEQ said nothing.) Finally, liquid sludge hauled to the landfill was handled so badly that even DEQ had to admonish MWMC & have it cleaned up. After reading about DEQ's actions and their failure in the Deschutes County chemical dump, I would not TRUST them to monitor MY water supply.

THREE

Last but not least, the "Bird-Strike" Problem. I will not elaborate on the material included in the EIS except to point out that on the Sacramento Study only 22 seagulls were noted in the entire area in all, and that only a PART of the study done in Corvallis by Irwin is included. The main point made, and NOT included was his statement (also in a news item in the Junction City Times,) That: "If you're going to have more birds, then obviously you're more likely to have a bird strike." This after: "--a sludge facility WOULD attract more birds, and more VARIETIES of species---" at a lagoon than would any grass fields. You already must know that Brown & Caldwell, MWMC, and officials, including those at the Eugene Airport (Mahlon Sweet Field) were given notice by the FAA's Chief of Airports Planning Branch, George L. Buley, TWICE, and by Robert Brown, FAA Regional Director, ONCE that they fully expect hazards and strikes, and referring them to their guidelines...as to distance, from runways where jet aircraft land and take off. MWMC says NO problem will occur, as it plans only a "facultive" lagoon. This is hogwash--it cannot BE a facultive lagoon when the plan includes continual dumping of raw sewage over the entire year. Living as I do, right down the "slot" and seeing the end-of-runway lights from my driveway, this scares me no end...and not to say any possible crew and passengers using the pattern. 5 airlines are also concerned, and have so stated their objections to "Site C."

I regard the EIS to be a "Monument to Waste." I and others have opposed the system's moving "Metro's" problem into OUR backyard, as it was, for FOUR YEARS. Bureaucrats, consultants, lawyers, and contractors have enriched themselves or justified their existance over this "Goldmine." We have seen them almost completely take the whole mine, while WE got the "SHAFT," as in the song Jerry Reed sings.... We have faced condemnation, endless and futile hearings, incompetent consultants, lying politicians, illegal or fraudulent testing, some of which were hazardous, using live virus without advising the residents ("Shirley Ditch") the continual harassment, the tension, and heartache, none of which were or will ever be addressed. The point of attack from the beginning maintained by the "Metro" officials and Eugene in particular, was, if damage occured: "Sue Us." That has been done, but to little avail. One who recently died of cancer of the liver claimed both he and his mother were poisoned by the water, as he used a well adjoining the drying beds on River Avenue when condemned, + was never, to my knowledge, fully compensated for the paymentm, and died short some $10,000 of what Eugene owed him. He had already spent nearly that in lawyers fees. Another has spent about $8,000 so far. This is an area which has not been addressed in the EIS, but one which affects all of us. One neighbor was in the nursery business, and was also condemned (adjoined the plant on River Ave. also) then moved out here, and now THIS property lies within 800 feet of the recent purchase by MWMC of 125 acres adjoining "Site C", so has been DOUBLY injured. All of us have seen our properties devalued with the advent of the plans alone. None of us will ever see this injustice remedied. One member of MWMC brought this up, but the others were not interested. I would feel this inequity, inasmuch as none of us benefit from this and future damages, SHOULD be compensated for this financially. We should NOT have to pay to have "Metro's" problem dumped on us so they do not. There are many ways this could be done, and SHOULD be done.

With but 55% of a heart left, I will doubtless die before the worst of the damage is done, but hate it will happen, as happen it will should it be funded. I feel now that I did all I could, wasting 4 years of my life, in endless hearings and meetings, ranging from the regular 7 AM "eye openers" of MWMC to those set up as special meetings and advertised 4 hours before in the papers...another illegal (State) action, designed to prohibit public input. I pity the poor ratepayers saddled with this fiasco for the next 60 years or more, and MWMC has not even included retirement of bonds sold by the "Service District" (in actuallity, the County Commissioners) to date. Due to this and the direction and inequities, and just plain political ramifications and/or possible legal responsibilities, our commissioners now state they "want out." Already, Springfield ratepayers and users have found the cost too high, and rebelled.

Those who oppose MWMC's plans are degraded, with terms ranging from "crazies," "Paranoid," "hysterical", and all the way to "stupid" and "uninformed." We are none of those, but suspect we WILL be paranoid before this is over. I noted the enclosed item from the Guard of Oct. 28th, last. You will be interested, I am sure, to know that it appears (Springfield News) on Dec. 8th, 11 days before the "input" period for the EIS ends, MWMC purchased this 125 acres "additional" adjoining Site "C"---so they either know the outcome already, or are faulting your power as regards the funding? Perhaps EPA will find out a bit of what We have faced over the past 4 years?

Summation: the plans are disgraceful, if not illegal, are definitely immoral, as are some of the actions of MWMC and it's members and employees.

Thank you for the opportunity to say my "piece," and for your consideration to my concerns and those of all who will FEEL the impact here and for years to come. Again: Refuse all but Alternative III --the only halfway acceptable alternate

A-53 Yours, Howard G. Humphrey

91540 Prairie Road, Junction City, OR 97448 Howard G. Humphrey

(COPY)

Sludge site still sought by agency

Page 15C

THE REGISTER-GUARD, Eugene, Oregon, Friday, October 28, 1983

SPRINGFIELD — The Metropolitan Wastewater Management Commission has expanded its search for a permanent site for disposal of sludge from the Eugene-Springfield regional sewage treatment plant.

The commission two years ago designated an area north of Eugene known as "Site C" as its preferred location for the 170-acre facility. The site would be used to dispose of solids left from the sewage treatment process.

However, public protests against the location forced a federal environmental impact study, which meant the agency would be unable to complete the facility before the new regional plant goes into operation next year.

The delay caused the commission to develop an interim sludge disposal program using the county's Short Mountain landfill near Creswell and various agricultural lands during dry weather.

In an action taken after a closed discussion Thursday, the commission adopted a resolution designating an additional 125 acres south and west of "Site C" as a potential location for the sludge disposal facility.

? Before the decision is made?

The properties are located south of Meadowview Road, north of Awbrey Lane, east of Highway 99 and west of the Southern Pacific railroad right of way.

Project director Bill Pye said the decision will afford an opportunity to consider locating part of the facility under Bonneville Power Administration transmission lines, if the BPA gives its approval.

Pye said both "Site C" and the additional 125 acres have been judged acceptable in the federal environmental impact study completed earlier this year.

? Already purchased (Dec 8th)

"acceptable?" To Whom?

While Thursday's decision provides 290 acres in which to choose a location, Pye said, the agency may be able to fit its sludge disposal facilities in as little as 125 acres, if it is able to use equipment it is acquiring for the interim disposal program.

In another action earlier in Thursday's meeting, the commission approved nearly $2.9 million in construction and equipment contracts, nearly $1.8 million of them for sludge facilities and equipment to be used in the interim disposal program.

The largest contract for $1,320,000 for the construction of the Terry Street pump station in west Eugene went to Marion Construction Co. of Salem, the lowest of seven bidders.

Site "C" PotentialSludge Management Area

I would like to voice my concerns about Site "C" and the influence it will have on the surrounding land, people and cities.

First, the topography of the land is of low elevation, starting with the Enid Station Road for it is only 365 feet in elevation. Moving on to the north we find Meadow View which has an elevation of only 350 feet. This means that there is more standing water in the Winter and Spring on these lands. Any use of these lands for sludge management sites would cause pollution on the surface water and damage to the lands within its boundaries. The numerous small intermittent streams which run through the area would be polluted by any liquid sludge being transmitted into the surface waters. Most of these small streams run toward Junction City. This would cause environmental problems for the people who live north of the site "C". Everyone who had a well would have water problems plus any birds and wildlife would suffer for lack of suitable habitat, food and water.

Second, I feel the area is subject to general flooding. The latest information from Federal Emergency Management Agency on FloodHazard dated February 10, 1981 shows parts of site "C" in special flood hazard area. See Exhibit I.

Third, the land was designated for agriculture use in 1974 by the Lane Council of Governments in their comprehensive area-wide planning program. This land falls into two categories, Class I - High Intensity Agriculture which is row crops, berries and orchards and Class II - Medium Intensity Agriculture which is small grains, grass crops, fall and winter pastures, some orchards, row crops and berries. See Exhibit 2.

In closing, I cannot see land which in 1974 was designated for high and medium intensity agriculture use, will be proposed as a potential sludge management site. It is a direct contradiction of the many goals and ideals and I quote from the Lane Council of Governments:

> "Large areas of Class I agricultural soils within and bordering the Eugene-Springfield Metropolitan Area and in the lower McKenzie River Valley hav [illegible] converted to urban uses and no longer available for farming. Demand for further urban development on the county's best agricultural land is certain to continue

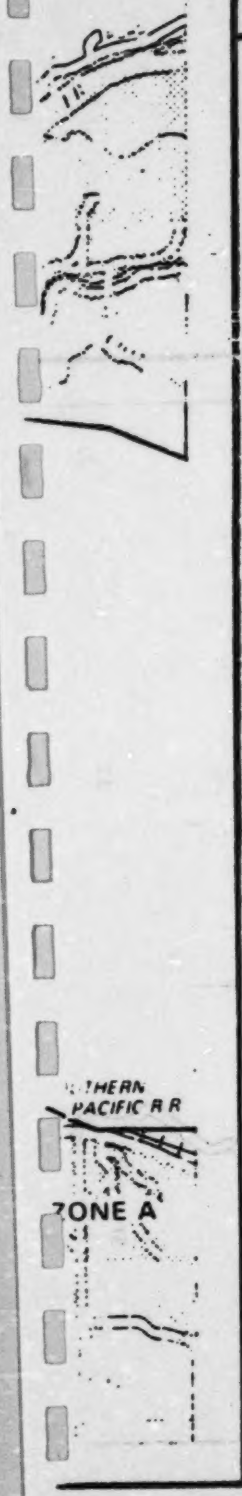
> in the future. However, this demand must be weighed against the importance of retaining the agricultural land for food production and open space."

Then is the land which is to be site "C" sludge management area is to be taken out of agricultural use the governmental system which made these policies have failed to make clear and unbiased policies and failed to serve the people of this county.

Donovan Kendall

Exh #1

APPROXIMATE SCALE
2000
0
2000 FEET


...THERN
PACIFIC R R
ZONE A

NATIONAL FLOOD INSURANCE PROGRAM

FHBM

FLOOD HAZARD BOUNDARY MAP

LANE COUNTY, OREGON

UNINCORPORATED AREA

PANEL 13 OF 33

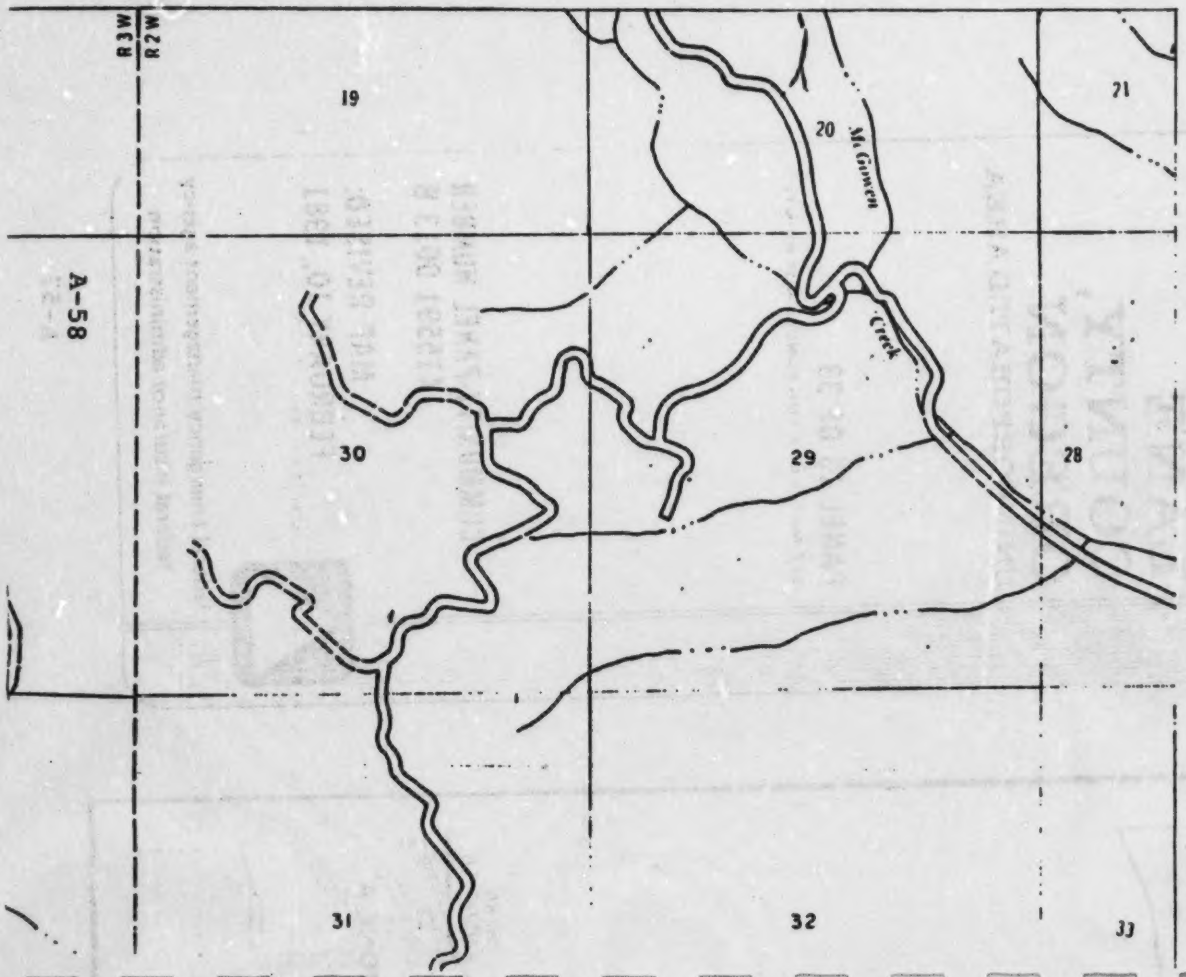
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
415591 0013 B

MAP REVISED:
FEBRUARY 10, 1981

federal emergency management agency
federal insurance administration

Exh #1



KEY TO MAP

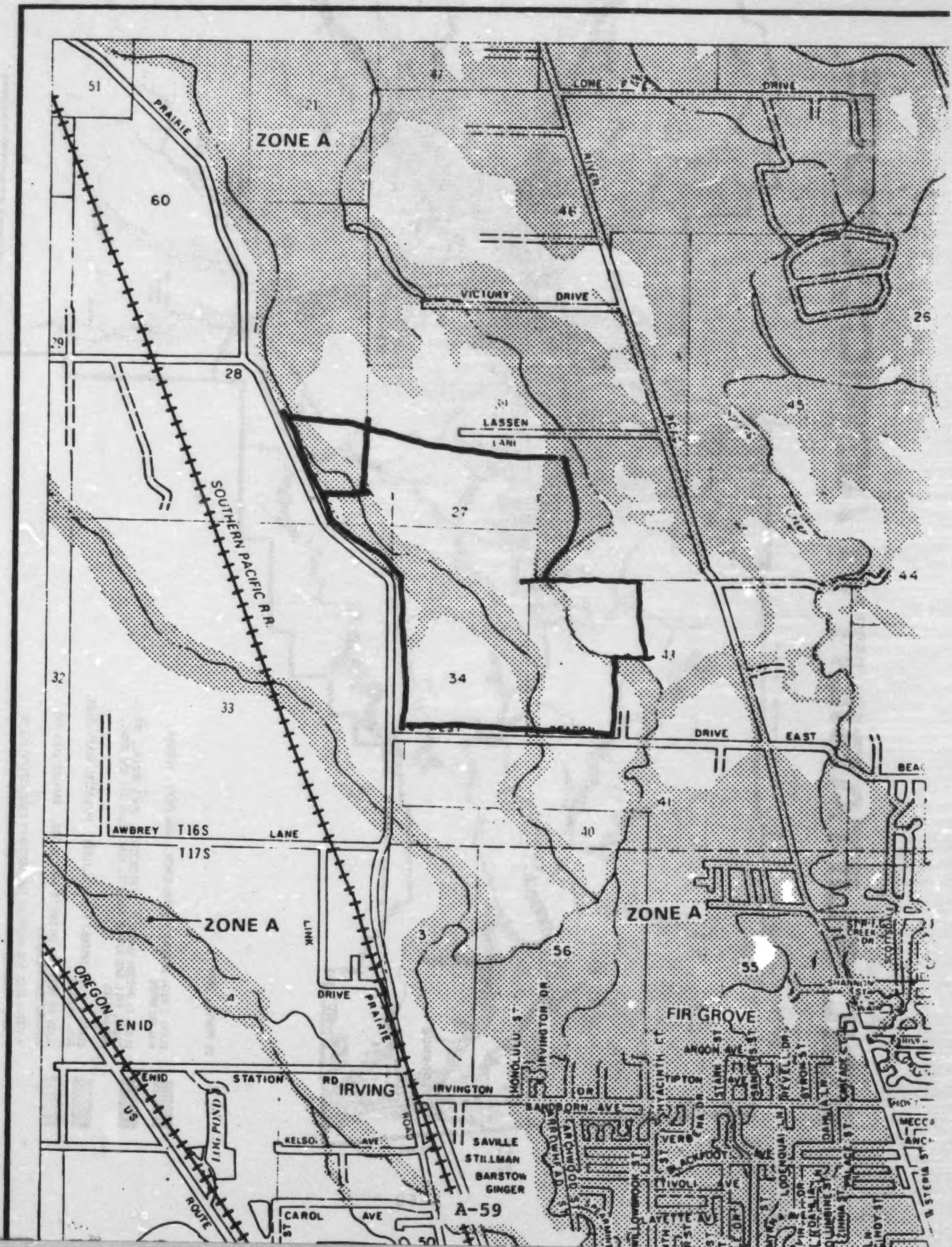
SPECIAL FLOOD HAZARD AREA	▨ ZONE A

Note These maps may not include all Special Flood Hazard Areas in the community After a more detailed study, the Special Flood Hazard Areas shown on these maps may be modified, and other areas added

TO DETERMINE IF FLOOD INSURANCE IS AVAILABLE IN THIS COMMUNITY, CONTACT YOUR INSURANCE AGENT, OR CALL THE NATIONAL FLOOD INSURANCE PROGRAM, AT (800) 638-6620, OR (800) 424-8872.

February 10, 1981 Panel Revised To Reflect FEMA Title Block.

Exh #1



ZONE A
ZONE A
ZONE A
PRAIRIE
SOUTHERN PACIFIC R.R.
LONE
DRIVE
RIVER
VICTORY
DRIVE
LASSEN
LANE
WEST
BEACON
DRIVE
EAST
AWBREY
T16S
T17S
LANE
LINK
DRIVE
PRAIRIE
OREGON
ENID
ENID
STATION
RD
IRVING
IRVINGTON
ROAD
KELSO
AVE
SAVILLE
STILLMAN
BARSTOW
GINGER
CAROL
AVE
US
ROUTE
FIR GROVE
HONOLULU ST
IRVINGTON DR
ARGON AVE
TIPTON
SANDBORN AVE
VERB
BLACKFOOT AVE
TIVOLI AVE
LAVETTE AV
WILLOWBROOK ST
SHANNON
SPRING CREEK DR
A-59
51
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21
46
26
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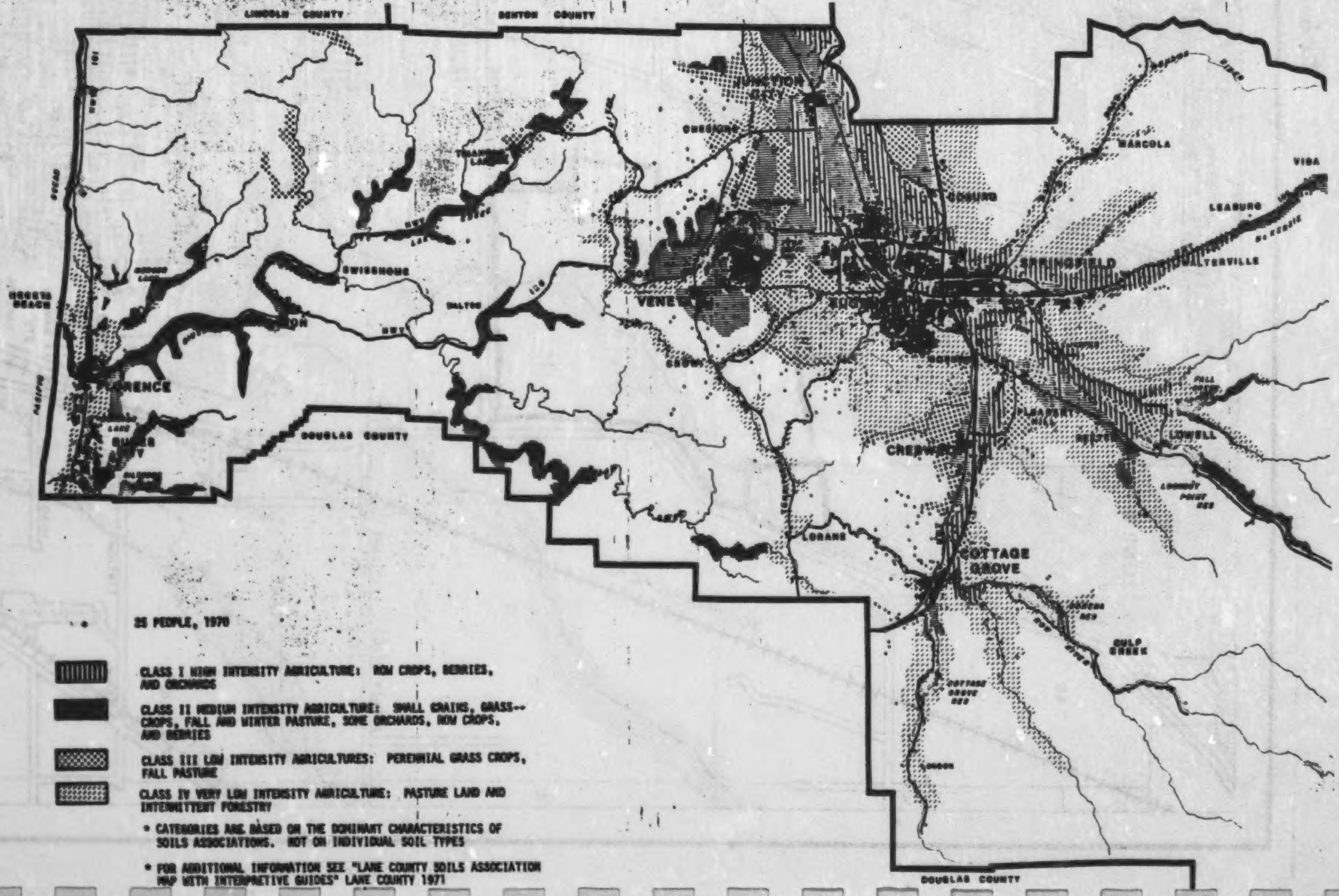
4
50

Exh # 2

SOIL SUITABILITY: AGRICULTURE


LINCOLN COUNTY
BENTON COUNTY
DOUGLAS COUNTY
DOUGLAS COUNTY
JUNCTION CITY
COBURG
MARCOLA
VIDA
LEABURG
SPRINGFIELD
EUGENE
VENETA
SWISSHOME
MAPLETON
FLORENCE
DUNES CITY
CRESWELL
LOWELL
COTTAGE GROVE
LORANE
CULP CREEK
PLEASANT HILL
OCEAN
PACIFIC
101
126
DEXTER
FALL CREEK
LOOKOUT POINT RES
DORENA RES
COTTAGE GROVE RES
LONDON

• 25 PEOPLE, 1970

▥ CLASS I HIGH INTENSITY AGRICULTURE: ROW CROPS, BERRIES, AND ORCHARDS

■ CLASS II MEDIUM INTENSITY AGRICULTURE: SMALL GRAINS, GRASS--CROPS, FALL AND WINTER PASTURE, SOME ORCHARDS, ROW CROPS, AND BERRIES

▨ CLASS III LOW INTENSITY AGRICULTURES: PERENNIAL GRASS CROPS, FALL PASTURE

▒ CLASS IV VERY LOW INTENSITY AGRICULTURE: PASTURE LAND AND INTERMITTENT FORESTRY

- CATEGORIES ARE BASED ON THE DOMINANT CHARACTERISTICS OF SOILS ASSOCIATIONS. NOT ON INDIVIDUAL SOIL TYPES

- FOR ADDITIONAL INFORMATION SEE "LANE COUNTY SOILS ASSOCIATION MAP WITH INTERPRETIVE GUIDES" LANE COUNTY 1971

91562 Prairie Rd
Junction City, Oregon
97448

EPA -

Re: Any Sludge facilities on Site "C" or Prairie Road (MWMC - Eugene, Oregon)

We oppose off-site sludge facilities. To put such facilities in our area endangers our ground water. (Sunday 12/10 - 60 Minutes) and lowers our property values.

MWMC is a totaly negligent concern. In studying groundwater flow from the EPA EIS study - Why isn't our water (well) being checked by MWMC - regarding the Agripac site? - They are checking wells, but not ones (ours) in the direction of the underground water flow - MWMC is an uncaring, machine that moves over people and destroys happiness of life.

We live within the 1000' range to be effected by smells and water contamination - I say don't give them the money to destroys us.

Dan & Ann Klemp

P.S. Mr. Rushton's group never checked the surface water on our land - how reliable is his group?

DEC 16 1983

ENVIRONMENTAL EVALUATION
BRANCH

December 14, 1983
90932 Brown Ln
Eugene, Or 97402

EPA Norma Young
1200 6th Ave
Seattle, Wash 98101

To Whom This May Concern:

Containing Comments on Sewage Lagoon Site C.

(1.) We are really upset - For all these years No septic tanks allowed due to high water table on our own properties. Then this ———

(2) Our well is 17' - Now you say its very possible for Contamination. Last week water was over our road of Brown Lane (North of Aubrey) And its not yet high level. Disgusting!

(3.) We have gone to meeting upon meeting. Why - It was decided before we even began.

(4) Our property was sold for $115,000.00 Cash in hand - Article came in Guard (Eugene Register Guard) - People became leary & backed out - How much would the Cities pay us to use our county & land for their waste.

(over)

5. Tell me - how & what finances will we have to retire on if after years of planning our property is worth less. We raised our families in this area. We farm here - Will our food be fit to consume - Would you come & drink & eat -?

6. City governments - Our officials we put in charge - This city & area is a good place not to live in anymore. Decisions on business, building permits etc. are a farce.

Thank-You for taking time - to listen we are only people to try to work & feed ourselves & live in a more futile society all the time.

Sincerely,
Lois M. Lund
90932 Brown Ln
Eugene, OR 97402
688-0325

Is it the truth ?? Phones are being invaded of privacy, business bankrupt, people having to leave homes Just because we object to this!?.

Junction City, Oregon
December 6, 1983

Norma Young
M/S 443,1200 Sixth Ave,
Seattle Washington 98101

In relating to the impacts of the proposed sludge Management plan for the Eugene-Springfield area, Oregon.

We are opposed to the location of sludge in the area North of Eugene and South of Junction City along Prairie Road and East of the Southern Pacfic Railroad. This area is subject to flooding during the winter when rain fall is heavy such as this year. The runoff from the sludge will contaminate our wells for drinking water.

Yours very truly,

Richard M.& Sadie A. Lyon
91884 Prairie Road
Junction City, Ore. 97448

Richard M. Lyon
Sadie A. Lyon

RECEIVED
DEC 8 1983
ENVIRONMENTAL EVALUATION
BRANCH

November 1, 1983

I have been in business in Springfield for 15 years and I'm real disgusted with our MWMC management.

To me and many others we have really been ripped off. I spear headed a petition drive and received more than enough signatures to put our sewer charge up to a vote of the people but a county judge ruled against us.

The City of Springfield has forced their sewer services upon us through the use of bancrofting funds which itself has proved very questionable. The project itself in our case was illegal, yet the City of Springfield and MWMC was able to force their wishes upon us. I personally can point out at least 300 senior citzens on fixed incomes that are faced with a foreclosure of their homes.

Why can't we have a complete investigation and bring to light many of the high pressure tactics that were used?

The wastewater plant and sewerage lagoon itself is a public disgrace. Many small businesses within a 10 mile radius of this monstrosity are symptomatically being eliminated. How can these things happen in democracy?

Nathaniel Di Maso

RECEIVED
16 1983
ENVIRONMENTAL EVALUATION
BRANCH

**ATTORNEY
AT
LAW**

JIM MELAMED
259 E. Fifth Avenue
Eugene, Oregon 97401
(503) 345-1456

**MEDIATION
AND
ARBITRATION**

December 6, 1983

Norma Young M/S 443
U.S.E.P.A., Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Re: Metropolitan Wastewater Management Commission
Sludge Management Plan DEIS

Dear Ms. Young:

Here enclosed are Comments to the MWMC Sludge Management Plan DEIS submitted on behalf of the City of Coburg, Oregon, the Coburg Planning Commission, the Coburg Chamber of Commerce, the 102 members of the Muddy Creeks Irrigation Project and more than 60 individuals and businesses residing or located in the greater Coburg area.

I trust that the Environmental Protection Agency will give full consideration to these written comments along with the oral presentation that I will be making this evening in Springfield, Oregon.

Please feel free to call or write with any questions that you may have.

Very truly yours,

Jim Melamed

JCM/ss

RECEIVED
DEC 8 1983
ENVIRONMENTAL EVALUATION
BRANCH

COMMENTS TO DRAFT ENVIRONMENTAL IMPACT STATEMENT

METROPOLITAN WASTEWATER MANAGEMENT COMMISSION

SLUDGE MANAGEMENT PLAN

Submitted to the Environmental Protection Agency

December 6, 1983

COMMENTS TO DRAFT ENVIRONMENTAL IMPACT STATEMENT

METROPOLITAN WASTEWATER MANAGEMENT COMMISSION

SLUDGE MANAGEMENT PLAN

I. INTRODUCTION

These Comments to the Metropolitan Wastewater Management Commission Sludge Management Plan Draft Environmental Impact Statement are submitted on behalf of the City of Coburg, the Coburg Planning Commission, the Coburg Chamber of Commerce, the 102 members of the Muddy Creeks Irrigation Project (listed in Exhibit "A" hereto), and more than sixty individuals and businesses residing or located in the greater Coburg area (listed in Exhibit "B" hereto). A copy of a joint resolution of the City of Coburg and the Coburg Planning Commission supporting these Comments is attached hereto as Exhibit "C" and, by this reference, incorporated herein. All of these parties express their appreciation to EPA for this opportunity to provide meaningful written comment on this proposed sludge management plan.

In brief, the individuals, businesses, associations and governmental entities represented herein: (1) question and challenge the analysis and assumptions which lies behind EPA's selection of the DEIS "preferred alternative" sludge management system; and (2) are united in their opposition to the establishment of any proposed remote sludge management facility at the "Coburg Hills Site."

The fact that EPA has resurrected the "Coburg Hills Site" for consideration in the DEIS, without due notice and after this site has been firmly rejected by the Metropolitan Wastewater Management Commission (hereinafter MWMC) in its comprehensive 1980 Sludge Management Program, can only be explained by EPA's obligation to analyze a set of alternative sites in the EIS. This resurrection of the "Coburg Hills Site" is improper and fails to fulfill this statutory and regulatory obligation to examine a reasonable range of alternative sites. This resurrection creates the dangerous possibility of EPA locating a massive sewage facility not by reasoned choice, but, rather, by unlawful default.

The DEIS also fails to thoroughly evaluate, as it must, all reasonable technologies for managing Eugene and Springfield's waste, including "state of the art" technologies that would not require the development of any massive remote site. Furthermore, the DEIS preferred alternative system has been selected based upon the assumption that there will be a sustained agricultural sludge reuse market. This assumption is not documented.

There are numerous additional reasons for EPA rejecting the resurrected "Coburg Hills Site" as the location for any MWMC remote sludge lagoon/drying beds facility. Among these are the five reasons that MWMC's 1980 Sludge Management Program did not even include the "Coburg Hills Site" in its final site analysis:

1. Less favorable drying conditions--less sun, wind, more rain than central valley.

2. On slope--high bed construction cost.

3. Force main 2 miles longer than Site C.

4. Away from Agricultural lands of minimum limitation for sludge use.

5. Poor road access. Trucks must go through Coburg.

(MWMC Sludge Management Program, 1980, p. A-11)

While MWMC did not even include the "Coburg Hills Site" in its final analysis of five potential remote sludge facility sites, EPA has seen fit to resurrect this incompletely studied alternative for its final analysis of only three potential remote sludge facility sites. EPA has done this without adequate notice or explanation. Nowhere in the DEIS does EPA directly confront the factors that led MWMC to reject the "Coburg Hills Site" as one unfit for final analysis, nor does EPA adequately explain its failure to resurrect or develop other alternative sites.

Having been resurrected, the danger exists that the "Coburg Hills Site" will be selected by EPA by default. As the only other two remote sites under consideration by EPA, "Site C" and "Prairie Road," are literally just across the railroad tracks from one another, the risk exists that both of those sites could be rejected by EPA for a single reason. With the "Coburg Hills Site" being the only other remote site considered in the DEIS, the risk of the "Coburg Hills Site" being selected by default, rather than reasoned choice, is substantial.

Furthermore, any selection of the "Coburg Hills Site" for the proposed MWMC remote facility would violate state and local land use law, particularly state land use goals for the preservation of agriculatural land, the timely orderly and efficient development of public facilities, energy conservation and urbanization. The DEIS also fails to adequately evaluate potential ground and surface water impacts at and around the "Coburg Hills Site" and fails to address the true economic impacts of this potential development on businesses in the Coburg area.

For these reasons and others discussed below, the above-named parties are compelled to submit these Comments in opposition to EPA's designated preferred alternative sludge management system and to the potential location of any proposed sewage facility at the "Coburg Hills Site." As is discussed, the establishment of any proposed sludge management facility at the "Coburg Hills Site" would be both unreasonable and unlawful.

II. INADEQUATE NOTICE AND ALTERNATIVES

A. EPA's Notice of "Coburg Hills Site" Alternative Inadequate

EPA has failed to take required efforts to allow public participation by those potentially affected by the establishment of a sewage facility at the "Coburg Hills Site" in and before the "Scoping" process for the EIS. As described in 40 CFR 6.400, EPA must "make diligent efforts to involve the public in the environmental review process . . . ." It is futher required that "[a]s soon as practicable after the decision to prepare an EIS and before the scoping process, the responsible official shall send the notice of intent to interested and affected members of the public . . . ."

Despite this obligation to make "diligent efforts" and to give the earliest possible notice to potentially affected persons, the first time that those potentially affected by the location of a sewage facility at the "Coburg Hills Site" reasonably heard of its resurrection was when the DEIS was delivered to their mailboxes in mid-November, 1983.

An examination of the November 17, 1982 Scoping Meeting Mailing List for this project (attached hereto as Exhibit "D") reveals that not a single person from the Coburg area was included. The owner of the proposed "Coburg Hills Site" was not even notified. Newspaper notices and the News Release to the scoping meeting (also attached hereto as Exhibit "D") do not remedy this situation. At best, this press release and these articles indicate that the proposed facilities would be located "north of Eugene." Truly, these newspaper articles are misleading. For example, the Springfield News article of Thursday, November 11, 1982, indicates that the facility would be in the Santa Clara area. The Eugene-Register Guard article of November 10, 1982, implies that the facility being considered would be in the Mahlon Sweet Airport area. There was, thus, no reasonable, much less "diligent," notice to people in the Coburg area that any "Coburg Hills Site" was being considered for resurrection by EPA.

This failure to reasonably allow early input into the EIS process by affected citizens in the Coburg area helps to explain certain deficiencies in the DEIS. This notice failure probably resulted from the reasonable initial conclusion by EPA that the "Coburg Hills Site" would simply not be an alternative in the DEIS. Regardless, by subsequently including the "Coburg Hills Site" in the DEIS, EPA has breached its public participation and notice obligations.

B. EPA's RANGE OF ALTERNATIVES IS NOT REASONABLE

As briefly described in the Introduction above, EPA has also failed to include a reasonable range of alternative sites and systems in the DEIS. The National Environmental Policy Act requires a "detailed statement . . . on . . . alternatives to the proposed action . . .." 42 U.S.C. 4332(C). In addition, agencies are commanded to "[s]tudy, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. 4332(E).

The duty to discuss alternatives has been described as the "lynch pin" of the entire impact statement. Natural Resources Defense Council v. Callaway, 524 F.2d 79, 92 (2d Cir. 1975). An in-depth discussion of a reasonable range of alternatives insures that the decisionmaker, as well as the public, has before it all reasonable approaches to a project. At the very least, the range of alternatives should be sufficient to permit a reasoned choice. Brooks v. Coleman, 518 F. 2d 17, 19 (9th Cir. 1975).

The applicable Council on Environmental Quality regulations also require a "rigorous exploration and objective evaluation of the environmental impacts of all reasonable alternative actions . . .. In each case, the analysis should be sufficiently detailed to reveal the agency's comparative evaluation of the environmental benefits, costs, and risks of the proposed action and each reasonable alternative." 40 CFR 1500.8(a)(4). "If the environmental statement fails to explain the basis for its range of alternatives, or why other reasonable alternatives were not considered, then it fails to meet the mandates of NEPA." State of California v. Bergland, 483 F. Supp. 465, 488 (D.C. Cal. 1980).

Despite this obligation for EPA to evaluate all reasonable alternative sites, the agency has failed to adequately explain its resurrection of the "Coburg Hills Site" to the exclusion of other previously considered MWMC sites. EPA has also failed to explain its failure to develop additional alternative sites for consideration that have never been considered by MWMC. In short, EPA has not considered all reasonably available alternative sites for a proposed remote sludge management facility in the DEIS.

The net result is that the DEIS only proposes three alternative remote sludge facility sites, with two of those sites, "Site C" and "Prairie Road," only a "stone's throw" away from one another. Thus created is the situation where a single factor might eliminate both of these sites, with the "Coburg Hills Site" being selected by default.

For example, when comparing "Site C" with the "Prairie Road Site" concerning the "bird strike" issue, the FAA has stated "obviously there would be no difference in that impact between these two sites." (Letter to William Pye of MWMC from Robert Brown of FAA, February 20, 1981). This possibility of the "Coburg Hills Site" being selected not by reasoned choice, but by default, because of a particular problem with the two other considered sites, illustrates the inadequacy of the range of alternative sites presented in the DEIS.

EPA has also failed to consider all reasonable alternative technologies in selecting the DEIS preferred alternative system. For instance, EPA has failed to consider "state of the art" on-site dewatering systems such as the JUD-CO heated screw dryer. (See Exhibit "E" hereto). Such technology is cabable of reducing sludge water content as low as 5%. The resulting dried sludge product can be used for either energy production or agricultural application. This technology is in use at the Terminal Island Sewage Plant in the Los Angelas area. Best of all, utilization of such technology could be accomplished on-site at the RTWP and eliminate the necessity for any remote site facility. Other modern technologies, such as that in San Diego where a private contractor hauls sewage away for incineration at its plant, have also not been adequately addressed in the DEIS.

III. EPA's PREFERRED SYSTEM IS BASED UPON UNKNOWN ASSUMPTIONS

EPA's selection of the DEIS preferred alternative system, where sludge is piped off-site for storage in winter and agricultural application in summer, is based upon the inadequately studied assumption that there will be sufficient demand by farmers for sludge reuse through the year 2004.

The DEIS' discussion of this issue, on page 46, is limited to the following:

(1) an estimate that 2,050 acres of cropland will be needed annually to accomplish total reuse of the sludge by the year 2000;

(2) MWMC had 490 acres in its 1982 reuse program;

(3) Specific locations for actual reuse have not been identified; and

(4) 4,500 acres that meet DEQ requirements for sludge reuse have been identified.

Missing from this discussion is an adequate analysis of the assumption that there will be willing farmers to accept sludge for reuse through the year 2004, the end of the planning period. Thus, EPA's preferred system is dependent upon a continuous private market to accept the sludge, yet there is no adequate analysis of long-term agricultural interest in filling this need.

This is critical, because, if there is not a sustained agricultural demand for the sludge, then, under the DEIS preferred alternative system, greatly increased use of the Short Mountain Landfill, as a backup depository, will be necessary. This possibility has not been adequately considered in EPA's selection of its preferred system. For instance, sludge could accumulate beyond the capacity of the FSLs within two years. Under EPA's preferred system, this would then require disposal at the Short Mountain Landfill, including disposal during the wet winter months. Such wet weather disposal could result in dangerous, contaminated runoff from the landfill site. (MWMC Sludge Management Plan, 1980, p. 9-18).

Furthermore, the DEIS has failed to consider and discuss the following situations identified by the 1980 MWMC Sludge Management Plan, at page 5-21, as potentially interrupting market acceptance for sludge:

(1) Uncooperative relationship between the urban and farming communities, stemming from an issue such as field burning.

(2) Crop damage attributable to sludge, or the rumor

of such damage.

(3) Toxic spills in the sludge.

(4) Reaching application limits for heavy metals.

(5) Emergence of a better product.

(6) Change in DEQ or EPA regulations.

These and other such forseeable occurances must be addressed in the DEIS in selecting a sludge management system that is dependent upon agricultural reuse. EPA's analysis must consider the very real possibility of a severely limited agricultural reuse market and the economic and environmental impacts of virtually complete reliance on year-round landfilling at the Short Mountain site. It would be unreasonable for EPA to finance the construction of a 5 or 7 mile pipeline and remote site facility without virtual complete assurance from those farmers who might reuse sludge that they do, in fact, intend to do so.

IV. THE ESTABLISHMENT OF ANY SEWAGE FACILITY AT THE "COBURG HILLS SITE" IS INCONSISTANT WITH STATE LAND USE LAW

The establishment of the proposed remote sewage facility at the "Coburg Hills Site" would be inconsistant with state and local land use law. The DEIS's discussion of this issue is inadequate, stating, at page 157, that "no definite conclusion is made regarding conformance with local and state land use law and policy." EPA's endorsement of a sludge management system without a comprehensive determination of the respective legality of the alternative sites for that system is irrational and illegal. As the DEIS recognizes, at page 26, EPA is obligated under 40 CFR 1506.2 to identify inconsistancies of an action with state and local plans and laws. This deficit must be remedied in the Final EIS. It is illegal and unreasonable for EPA to endorse a sludge management system which it has not determined, at least to a reasonable degree of certainty, can be legally constructed.

A land use analysis of the potential establishment of the proposed sludge management facilities at the "Coburg Hills Site" follows and indicates that no such establishment can be legally accomplished under state and local land use law.

A. The Establishment of a Sludge Management Facility at the "Coburg Hills Site" Would Violate the State Agricultural Lands Goal

The establishment of the proposed remote sludge management facility at the "Coburg Hills Site" would violate State Land Use Goal #3: "To preserve and maintain agricultural lands." This goal further states that:

> Agricultural lands shall be preserved and maintained for farm use, consistant with existant and future needs for agricultural products, forest and open space. These lands shall be inventoried and preserved by adopting exclusive farm use zones pursuant to ORS Chapter 215.

The "Implementation" section of the state Agricultural Lands Goal further declares:

> Non-farm uses permitted within farm use zones under ORS 215.213(2) and (3) should be minimized to allow for maximum agricultural productivity.

The "Coburg Hills Site" is currently zoned for exclusive farm use and is slated to also receive this protective designation in the impending Lane County Comprehensive Plan. Land within an exclusive farm use zone "shall be used exclusively for farm use except as otherwise provided in ORS 215.213." ORS 215.203. The Goal 2 Exception Process, as described in OAR 660-04-000, establishes how land identified as agricultural land may be zoned for other than exclusive farm use. OAR 660-05-010(5). Thus, any use of the "Coburg Hills Site" for any sewage management facility, notwithstading the non-farm uses permissible under ORS 215.213, would require an "Exception" to the state Agricultural Lands Goal. This necessity for an Exception to Goal 3 for any remote facility located on EFU land has been recognized by a member of the Lane County Planning Department. (MWMC Advisory Committee Minutes, February 11, 1981, p. 6).

Any "Exception" to the state Agricultural Lands Goal for the "Coburg Hills Site" would need to be supported by "compelling reasons and facts," OAR 660-04-000, including an explanation why it is "not possible to apply the Goal to the particular properties or situations." OAR 660-04-020(1). This analysis would also need to include consideration of alternative sites and an analysis of why the proposed use cannot be located on non-resource land that would not require an exception. OAR 660-04-020(2)(b)(A)(i). For the reasons discussed above, the DEIS' restricted consideration of alternative sites certainly could not serve as the basis for an Exception to Goal 3.

It is extremely doubtful that an Exception to the Agricultural Lands Goal could be obtained so as to establish a sewage management facility at the "Coburg Hills Site." Perhaps the greatest reason for this is the reasonable and MWMC recommended availability of "Site C," which is zoned for industrial use. There is no "Industrial Lands" or other state land use goal requiring an Exception to establish a remote sewage facility at "Site C." Even if "Site C" were determined to be unfit for the proposed remote sewage facility, a far more searching inquiry of alternative non-agricultural sites than that presented in the DEIS would be necessary to establish the basis for any Exception to the state Agricultural Lands Goal for the "Coburg Hills Site."

B. The Establishment of a Sewage Management Facility at the "Coburg Hills Site" Would Violate the State Public Facilities and Services Lane Use Goal

The establishment of any sewage Management Facility at the "Coburg Hills Site" would also violate State Land Use Goal #11: "To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development." This goal goes on to state that:

> Urban and rural development shall be guided and supported by types and levels of urban and rural services approprite for, but limited to, the needs and requirements of the urban, urbanizable and rural areas to be served.

The Guidelines to this goal include:

> 1. Plans providing for public facilities and services should be coordinated with plans for designation of urban boundaries, urbanizable land, rural uses and for the transition of rural land to urban uses; and
>
> 2. Public facilities and services for rural areas should be provided at levels appropriate for rural use only and should not support urban uses.

As is further discussed below concerning the excessive costs of locating any sewage facility at the "Coburg Hills Site" and the inconsistancy of doing so with the State Energy Conservation and Urbanization Goals, the establishment of any

Coburg Hills facility would not be "timely, orderly and efficient." The fact that the proposed system is not planned for implementation until 1989 is reason for EPA to take a patient approach to this project to ensure that the best practicable technology is implemented. This goal requires that any possibility of centralizing all facilities at the RWTP must be probed to its limits. The "efficiency" of a system which first centralizes all sludge for treatment, then pumps it to a remote site, then seeks to spread the sludge throughout the southern Willamette Valley, and then remotely landfills sludge not so applied must be questioned. There is great danger that MWMC's rush to secure state and federal funding will result not in the required "timely, orderly and efficient" public facility, but, rather, in a "Conastoga Wagon" for sludge management in the Eugene/Springfield area.

C. The Establishment of a Sewage Management Facility at the "Coburg Hills Site" Would Violate the State Land Use Goal of Energy Conservation

The establishment of any sewage facility at the "Coburg Hills Site" would also violate state Land Use Goal #13: "To conserve energy." This goal further states that:

> Land and uses developed on land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principals.

The DEIS recognizes that establishment of a remote sewage management facility at the "Coburg Hills Site" would be most energy consumptive (at page 170):

> If the Coburg Hills site were used, electrical energy consumption would likely increase somewhat because sludge would have to be pumped a greater distance from the RWTP. . . . It is likely that the overall haul distance [to reuse sites] would be greater from Coburg Hills because it is not centrally located to the grass seed growing areas of the upper Willamette Valley.

Thus, in the case of the "Coburg Hills Site," as the force main would need to be at least 2 miles longer than that required to either "Site C" or the "Prairie Road Site," operating energy consumption would greatest. Because of the additional pipeline that would need to be built to the "Coburg Hills Site," energy consumption during construction would also be greatest. While such energy consumptiveness might be justified to bring the sludge closer to the agricultural application areas, this is not the case with the "Coburg Hills Site." This site is most remote from not only the RWTP, but also from the potential agricultural sludge reuse areas. To build such excess energy consumptiveness into the MWMC sludge management system would be a violation of State Land Use Goal #13.

D. The Establishment of a Sewage Treatment Facility at the "Coburg Hills Site" Would Violate the State "Urbanization" Land Use Goal

The establishment of any sewage treatment facility at the "Coburg Hills Site" would also violate state Land Use Goal #14, which provides in part: "Urban growth boundaries shall be established to identify and separate urbanizable land from rural land." "Rural lands" are defined to be "those which are outside the urban growth boundary and are: (a) Non-urban agricultural, forest or open space lands or, (b) Other lands suitable for sparce settlement, small farms or acreage homesites with no or hardly any public services, and which are not suitable, necessary or intended for urban use." A map outlining the Eugene/Springfield Metropolitant Urban Growth Boundary is attached hereto as Exhibit "F". In commenting on this urban growth boundary, the 1982 Metro Area General Plan, at page II-E-14, states: "The separation between urban and urbanizable lands and rural lands formed by the urban growth boundary creates a sharp distinction between ultimate urban uses and agricultural uses on rural lands."

The location of any sewage management facility at the "Coburg Hills Site" would breach this required "sharp distinction" by imposing upon an area that is unquestionably rural an urban facility so massive in scale that it is larger than the neighboring City of Coburg itself. The imposition of such a clearly urban use far beyond the metropolitan urban growth boundary would, thus, violate state Land Use Goal #14. This is especially true as the Coburg rural area here potentially burdened by this facility will not be directly benefitted by it. Neither the City of Coburg nor the Coburg Hills area is planned for inclusion in the MWMC wastewater management system. This is in contrast to the River Road/Santa Clara area, which lies within the planned service area for the MWMC sewage management system. (1980 MWMC Sludge Management Program, pages 3-1; 3-10.

V. THE DEIS INADEQUATELY EVALUATES AND UNDERSTATES THE ENVIRONMENTAL AND ECONOMIC IMPACTS UPON THE CITY OF COBURG AND COBURG HILLS AREA

The DEIS inadequately evaluates and understates the environmental and economic impacts of the proposed remote sewage laggon/drying bed facility upon the City of Coburg and the Coburg Hills area. The impacts most inadequately addressed in the DEIS are the potential for surface water and ground water contamination at and around the "Coburg Hills Site" and the visual/economic impact that development of the massive sewage management facility would have on the Coburg area economy.

A. The DEIS Inadequately Evaluates and Understates Potential Surface and Ground Water Contamination At and Around the "Coburg Hills Site"

The DEIS fails to adequately evaluate and understates the potential for surface water and ground water contamination at and around the "Coburg Hills Site." A significant reason for this is EPA's failure to perform any analysis whatsoever of the specific soils underlaying this proposed site. As stated on page 7 of the DEIS, "subsurface conditions at Coburg Hills relatively unknown." The DEIS, at page 86, more bluntly states with regard to the "Coburg Hills Site," "subsurface soil conditions have not been explored." This is of especially great concern because, had EPA contacted the owner of proposed "Coburg Hills Site," he could have informed the agency that substantial amounts of gravel exist at this site. This significantly increases the risk of contamination of surrounding water supplies.

The importance of such missing information is magnified by the DEIS' recognition, at page 81, that groundwater flow at the "Coburg Hills Site" trends toward the City of Coburg. As discussed in the joint resolution of the City of Coburg and Coburg Planning Commission, attached hereto as Exhibit "C", the City has recently had substantial problems with contamination of its water supply. This fact and the possible incremental impact of locating the remote sludge management facility at the "Coburg Hills Site" is not even discussed in the DEIS.

Additional problems with the DEIS' consideration of groundwater contamination include EPA's reliance on well monitoring. Well monitoring is not documented in the DEIS to be capable of eliminating, much less reversing, groundwater contamination. The DEIS also fails to discuss any contingency plans should ground water contamination at the "Coburg Hills Site," or any other site, be greater than anticipated. This is especially significant in the case of the "Coburg Hills Site" as cuts of up to 7 feet will be required to provide level areas for drying beds, thus "increasing the possibility of encountering adverse soil conditions, such as a permeable sand and gravel aquifer at shallow depths." (DEIS, page 86).

The potential contamination of surface water sources by the establishment of a sewage management facility at the "Coburg Hills Site" is also significantly understated. The first potential source of such contamination is from the proposed seven mile long force main route. As the DEIS recognizes:

> The force main route to the Coburg Hills Site crosses the Willamette Main Stem, the McKenzie River, and the upper portion of Muddy Creek. Due to the McKenzie's high water quality and use, any large spill that entered the river would significantly alter water quality.

The DEIS further recognizes that "[r]upture or leakage of the sludge supply or supernatant return pipes could result in a significant impact on surface water quality," at page 110, and that the force mains would be above ground at river crossings, at page 134.

Despite this recognition of the potential for contamination of the Willamette Main Stem, McKenzie River and Muddy Creek, from either a low-level undetected leak or a major break in the pipeline to the proposed "Coburg Hills Site," the DEIS fails to adequately assess the potential environmental and economic costs of such direct contamination. For instance, the DEIS fails to specify what the economic and environmental costs would be of a major rupture proximate to the McKenzie River. Nor does the DEIS recognize the possibility that such a rupture could be caused by a vandal's single sludge-hammer blow. By running the force main, exposed, directly over the Willamette and McKenzie Rivers and Muddy Creek, EPA would be exposing not only those in the immediate vicinity of the "Coburg Hills Site" to contamination, but also untold numbers of people and wildlife downstream to great risk. Such potential impacts must be fully analyzed in an environmental impact statement.

Additionally, although recognizing that the highest risk to surface water quality exists at the "Coburg Hills Site" due to the presence of the Muddy Creek Floodplain, the DEIS fails to assess at a reasonable level of detail the likely impacts of contamination of the Muddy Creeks Irrigation Project. Muddy Creeks Irrigation Project has an extensive irrigation network that irrigates approximately 6,000 acres. The Project originates at Armitage Bridge on the McKenzie River and finally empties into the Willamette River at Corvallis. One of the laterals to this Project is Daniels Creek, which runs immediately adjacent to the proposed "Coburg Hills Site." The 102 members of the Project grow a diverse variety of crops, many for human consumption. Despite this, the health and economic impacts of any significant contamination of the Muddy Creeks Irrigation Project have not been addressed in the DEIS.

B. The DEIS Inadequately Evaluates and Understates the Visual and Economic Impacts of any Sewage Facility at the "Coburg Hills Site"

The DEIS also inadequately evaluates and understates the visual and economic impacts of any sewage facility at the "Coburg Hills Site" upon nearby landowners, businesses in the Interstate 5/Van Duyn Road Interchange area, and the City of Coburg itself.

The high visibility of the proposed "Coburg Hills Site" from homes along Van Duyn Road is shown by the photographs attached hereto as Exhibit "G". In failing to specify the number of homes so impacted, the DEIS fails to recognize recent county zoning approval for a cluster subdivision along Van Duyn Road to include an additional 30 homesites. All of these residences will be south of the proposed Coburg Hills facility and, thus, directly subject to the odors emitted from the sewage lagoon/drying bed complex.

The DEIS also fails to even consider the potential economic impact of the proposed facility on businesses in the Interstate 5/Van Duyn Road Interchange area and on the City of Coburg itself. As the DEIS states at page 171, "[t]he Coburg Hills site is easily visible from Interstate 5." Somehow, despite this clear recognition, the DEIS absolutely ignores the economic impacts of this fact. Drivers heading south on Interstate 5 pass the proposed site, including 35 to 50 acres of sewage lagoons and air drying beds, approximately one-half mile before the Van Duyn Road/Coburg exit. It is certain that viewing, and quite possibly smelling, such a massive sewage facility will directly affect the decisions of a significant percentage of south-bound drivers as to whether or not to take this highway exit. The resulting impact on interchange and downtown Coburg businesses is obvious, yet the DEIS does not even mention, much less discuss and analyze, this direct economic impact. This is a major failing of the DEIS. This potential for placing a huge economic burden on the Coburg area by the locating of a massive sewage lagoon/drying bed facility immediately adjacent to Interstate 5 cannot be ignored by EPA.

Similarly, the City of Coburg itself would be directly impacted by the establishment of the proposed facility at the "Coburg Hills Site." There would not only be a lessening of interchange traffic through the city, and consequently a reduction in downtown business, but also a change in the overall livability and attractiveness of Coburg. This impact, though perhaps not readily quantifiable, is nonetheless real. Large truck traffic through downtown Coburg during both construction of the sewage facility and as part of the planned agricultural reuse program would also undoubtedly result from establishment of the proposed Coburg Hills sewage facility. The DEIS cannot simply ignore or superficially mention these impacts. EPA has an obligation to thoroughly analyze the social, economic and environmental impacts of all alternatives under its consideration.

VI. SUMMARY AND CONCLUSION

The DEIS fails to consider a reasonable range of both system alternatives and alternative sites for the proposed remote sewage lagoon/drying bed facility. EPA's selection of the preferred alternative system is also flawed because of its undocumented assumtion that there will be a continuous market for agricultural reuse of sludge. The locating of the proposed remote facility at the "Coburg Hills Site" is inconsistant with state and local land use law and, for this reason, would be illegal. The DEIS fails to adequately address potential surface water and ground water contamination and the costs of such occurences. Finally, the DEIS grossly understates the visual and economic impacts of locating the proposed facility at the "Coburg Hills Site."

Once an initial agency decision has been made, such as that to implement MWMC's and EPA's preferred alternative system, there is a tendancy for all subsequent investigation and analysis to tend justify that decision. The danger in this is that all possibilities are not then vigorously explored. The parties to these Comments urge EPA to thoroughly investigate all available technologies for the MWMC sludge management system, particularly those technologies that can manage Eugene and Springfield's sludge "on site," without unnecessarily intruding upon lands and people not benefitted by the proposed system. It is only after such a comprehensive inquiry has identified the best practicable technology for managing Eugene and Springfield's waste that any site for any remote MWMC facility should even be considered.

Should that consideration become necessary, the remote site should be located on non-exclusive farm use land, unless impossible, within the urban growth and system boundaries. It would only be appropriate to consider a site such as the "Coburg Hills Site" for a MWMC facility after such a comprehensive analysis and this consideration would legally need to include the consideration of numerous other potential remote sites. The DEIS, thus, prematurely and inadequately considers the "Coburg Hills Site" for the potential location of the proposed sludge lagoon/drying bed facility. Locating such a facility at this site will be firmly and continuously opposed unless and until all other reasonable possibilities are exhausted, as is required by the law.

Respectfully Submitted,

Jim Melamed
Attorney at Law
259 E. Fifth Avenue
Eugene, Oregon 97401
(503) 345-1456

A RESOLUTION opposing the location of a sewage facility on the "Coburg Hills Site" as proposed by the United States Environmental Protection Agency and the Metropolitan Wastewater Management Commission.

WHEREAS the City of Coburg Planning Commission and City Council finds that:

1. After public notice and hearing of the citizens of the City of Coburg, there is substantial and concerned opposition to the location of a sewage facility on the "Coburg Hills Site" and NO support therefor was received.

2. The City of Coburg may be adversely affected both physically and economically by the potential location of a sewage sludge storage facility near the City (identified as "Coburg Hills Site" in an Environmental Impact Statement (EIS) as prepared by the Environmental Protection Agency for the Metropolitan Wastewater Management Commission). The "Coburg Hills Site" also falls within the City of Coburg's "Area of Influence" as adopted in the City's Comprehensive Plan, as accepted by Lane County and the State of Oregon Land Conservation and Development Commission.

3. Ground Water Contamination: The City of Coburg has recently been troubled with the reliable delivery of water to residents within its service district. This problem has increased the burden on the already thin resources of the City. Even a remote threat to the purity of the City water supply is viewed with great alarm. The idea of a 120 to 170 acre facility holding the sewage residues of up to 400,000 people on sloping clay soils that are potentially unstable and subject to local flooding does nothing to diminish this alarm.

Specifically, the EIS has inadequately addressed issues of:
a) potential direct groundwater (and hence Coburg City water) contamination due to seal failure or flood loss due to the already high winter water table noted in the report, and
b) potential detrimental affects to water quality in Muddy Creek, Daniels Creek, and other drainage channels within and adjacent to the affected area.

4. The "Coburg Hills Site" is outside the Sewage Service District of the MWMC: The Planning Commission and City Council do not look favorably upon the City of Coburg being the unwitting and unwilling recipient of a facility which the Wastewater Commission cannot or will not locate within its own district. The EIS describes the "Coburg Hills Site" as "remote" and while it might seem so to members of the Wastewater Commission, it does not seem that way to the residents and businesses of Coburg and its immediate environs. Good planning does not dictate that peoples' residues be pushed out upon unwilling neighbors, but rather they be dealt with internally or with the full cooperation of those neighbors -- within the context of long range planning goals and guidelines. Therefore, the location of this

Exhibit "C"

facility should not be within Coburg's area of influence, but rather within the Wastewater Service District.

Specifically, the proposal:
a) has not addressed Coburg's planning process in terms of coordinating the MWMC's objectives and programs with those of our local jurisdiction;
b) recommends the growth of urban services from the Eugene/Springfield area into Coburg's area of influence without any benefit to Coburg's urban service programs and plans;
c) thus suggests essentially unplanned urban growth within the Coburg area without adequately addressing the issue of local livability;
d) has inadequately addressed potential adverse affects to the preservation of scenic and natural resources as well as Coburg's ongoing program of highlighting historic heritage goals; and
e) has given inadequate consideration to the compliance of this proposed land use with Oregon's statewide goals and guidelines.

5. Loss of commercial appeal: Certain existing businesses and potential future businesses which contribute tax revenues to the City of Coburg rely heavily upon freeway traffic for trade. Anything that might jeopardize this trade and subsequent present and future revenue to the City and School District is of concern to the Planning Commission and City Council. The acknowledged visual impact (per the EIS) from the freeway, as well as the unknown but potentially serious odors caused by the sewrage operation, might have an adverse influence on the attractiveness of those businesses serving the travelling public. This could have an adverse affect on both the businesses individually and the City.

Specifically, the proposal has inadequately addressed:
a) the probable adverse economic affects on Coburg businesses depending on the traveling public and hence on job opportunities within the Coburg area;
b) the related adverse affects on City revenues; and
c) potential adverse affects on local property values.

6. The plan has further made inadequate assessment of potential problems associated with:
a) increased mosquito and rodent populations; and
b) increased truck traffic in an already conjested Coburg area both during construction of the facility and in sludge removal/dispersal.

7. There has been insufficient consideration given to alternative sites and sewage disposal methods.

NOW THEREFORE the City of Coburg Planning Commission and City Council RESOLVE AS FOLLOWS:

1. The proposed location of a sewage sludge storage facility on the "Coburg Hills Site" by the United States Environmental Protection Agency and the Metropolitan Wastwater Management Commission is hereby strongly opposed.

2. The City of Coburg shall lend its name and support to comments being drafted by attorney Jim Melamed, in addition to those made above, in opposition to the establishment of any sewage facility at the "Coburg Hills Site", as described in the Draft Environmental Impact Statement to the Metropolitan Wastewater Management Commission Sewage Plan.

This resolution was read once in full and once by title at the December 1, 1983 joint meeting of the Coburg City Council and Planning Commission whereupon it was put to a final vote. -

The vote of the City Council was:

Yes: 6
No: 0
Abstention: 0

The vote of the Planning Commission was:

Yes: 6
No: 0
Abstention: 0

SIGNED AND APPROVED this 2nd day of December, 1983.

s\CWB\
C.W. Broughton, Mayor

s\TRB\
Tom R. Bowerman, Planning Commission Chairman

ATTEST:

s\MC\
Marie Connor, City Recorder

"C" - 3

December 12, 1983

COUNTRYVIEW INVESTMENTS
3324 Regent
Eugene, Oregon 97401

Mr. Richard R. Thiel, P.E.
Environmental Evaluation
U.S. Environmental Protection
Agency
1200 6th Avenue
Seattle, WA 96101

Dear Mr. Thiel:

For the past year most of our effort has been towards gaining approval for developing 250 acres for cluster housing in the Coburg Hills area. During all of the numerous discussions and meetings there has been no comment made with reguard to the sludge location on property adjacent to that under consideration for development. In October we finally received notice of the proposed site. By this time approval and the plat had been completed.

We hereby register our objection to the Coburg Hills site for the sludge since it is directly adjacent and upwind to the approved 30 cluster home sites. These sites are ready for construction.

The Lane County Commissioner, Bill Rogers reported in the first week in December that he had no knowledge of the development site for the sludge in our area.

Any communication should be directed to us at the above address and return communication will be handled through our attorney Thomas Hoyt and the attorney representing our zoning, Al Johnson.

Sincerely,
Bob Meltebeke
Bob Meltebeke
President-Owner

December 14, 1983

Mrs. Young, EPA

I am much concerned about the planned placement of Eugene's sewage sludge on Site "C" or Prairie Road sites because of the danger of groundwater pollution from that sewage into our well water supply and that for Junction City wells. I strongly urge you not to place that toxic sewage on our water supply!

We have found no place where EPA or MWMC have any protection provided for the people of this area for either their water supply or their land being permanently destroyed by the toxic effects of the sewage.

Sincerely,

Lucille Moyer

Lucille Moyer

90897 Prairie Rd.
Junction City, Or.
97448

DEC 21 1983

ENVIRONMENTAL EVALUATION
BRANCH

Lane County Local Government Boundary Commission: new city.   November 4,1983

Ms. Norma Young - E P A Region X, re: Eugene-Springfield-MWMC "Site C" Phase II EIS.

U.S. E P A - Local efforts to have this area in Oregon become more than three times the hazard from national average from waterborne diseases, which Oregon is now said to be by Associate Health Professor William Anderman, Oregon State University.

U.S. G A O - The wasting of federal funds in consolidating two old treatment plants shortcomings to becoming concentrated in only one outfall of sewage wastes into the Willamette River, north of Eugene and outside its its UGB on land and into the only potable groundwater source for many rural households,and for Junction City.

U.S. Department of Justice - The methods being employed to have trespasses be made against STATE OF OREGON STATEWIDE GOALS and the local METROPOLITAN PLAN adopted by Eugene-Springfield-Lane County, both of which include protecting the environment in those goals, and plans, and Federal laws.

To all of the authorities and officials involved - or should be involved:

How is the environment to be protected, and betterment rather than worsening occur in this area ?, when:

1. The November 4, 1983, published-in-the-Federal-Register EIS pertaining to Phase II sludge handling clearly shows that the Phase I method has the least environmental impacts, and the MWMC is indicating in a newspaper article that the most sensitive option at Site C is satisfactory to pursue. The Metropolitan Wastewater Management Commission (MWMC) appears to be attempting to continue opposing the persons who did cause the EIS to formulate, and attack the environment further than has been done at Site A-1, the so-called seasonal cannery waste disposal site.
   A. This Site A-1 spray irrigation site method is engineers-stated to be nearly $35,000 more per year to operate and approximately $2,000,000 more to construct than is an overland flow Site B-1 type of canndy wastes disposal facility. And, the overland flow method and location is much more envienmentally acceptable.
   B. This MWMC presents the very strong indications toward active participation in more attacks against our environment. To-date, the Oregon Department of Environmental Quality has dispensed federal funds, provided through the Environmental Protection Agency's Region X, to attack the environment which both are supposed to protect. This is incongruous and this should not be tolerated by anyone.
   C. The multitudes of authorities involved in having such trespasses against our environment be continued and worsened are acting irresponsibly. Should they study? YES! They should have studied and learned more, before any decisions were made. This also is the prerequisite for any more decisions and, hopefully, this should cause corrections to be made from the earlier "errors".
2. These authorities also appear to support the invalid dilution theory while Bonneville Power Administration's (BPA's) EIS on "house tightening" adopts the more rational perspective in their being no threshold at which environmental pollutants cause no harm. BPA is substantiated by those who have studied these factors, as has Steven Kon.
   A. Locally, however, the population growth for domestic sewage,which will be diluting the toxic wastes of industries, is not to be larger than 100 percent to year 2000 while the toxics emissions from industries to the sewer lines to year 2000 is shown on the MWMC Advisory Committee (MAC) minutes of April 15, 1981 bar graph to have increased concentration of from 2.5 times to 49 times that of the present industrial flow of those eleven listed toxics of concern in the local sewage.
   B. LCLGBC's staff's report for November 3 & 17, 1983, page VII-E-2, has that "..., average per capita flow assumptions for residential use were 150 gallons per day per capita (208 Plan, Section 4-2)...., more recent average per capita figures appear to be below 100 gallons per day." Obviously, human excremental patterns are established by other than water wastes flows in sewer lines. Those wastes do increase in concentration, as do the industial toxics wastes also increase in concentration when the diluting domestic flow has been reduced.
      1) Staff's reference appears to be not valid when its page E-I-2 shows Peak Base Flow for River Road-Santa Clara to year 2000 to be 12 million gallons/day (12 mgd) for its intended population. This produces 266 gallons per capita day (gpcd). When large numbers of persons are considered together for the purpose in setting criteria for domestic sewerage flow, their segmentation into less large groups are not extensively diverse. CH2M Hill engineers did the 208 Plan study and the 1975 study, Sewage Treatment Needs for Eugene-Springfield Urban Area:
         a) In this 1975 study is the page 3-18 statement for Eugene, "... yielding a total (domestic) flow of 240 gpcd dry weather flow." And, this 240 gpcd is to increase by 1 (one) gpcd annually. From 1975 to year 2000 is 25 years, so the adding of one (1) gpcd of 25 to the Eugene 1975 dry weather sewage flow of 240 gpcd is 265 gpcd. This shows excellence in CH 2M Hill's mathematic projections.

cont'd.

However, staff qualifies both the 150 gpod and the less than 100 gpod as being "average". This says that peak dry weather flows could be 300 gpod or the later 200 gpod, respectively. Page B-I-2 of staff's report says the Maximum dry weather day is 68 mgd, and this 68 mgd, divided by 293,700 population in year 2000 is 231 gpod for design year of the new plant. This is very conservative when RR-SC is figured for 266 gpod and CH2M Hill figured 265 gpod. This essentially 25 gpod would alter the design year peak flow against the new plant by 9.38 mgd.

b) Or, this 25 gpod could be the additional infiltrations from leaking sewer lines.

3. The RR-SC Urban Facilities Plan Citisen Advisory Team (CAT) meeting minutes of September 27, 1983 have that "The new plant is being built because the existing plants cannot meet the increased hydraulic demand caused by infiltration (This is substantiated by the Eugene old-plant builder having been reported as saying that the plant should have more capacity at the time the old plant's problems started - several years ago.)."; and "House connections between the house and the right-of-way have 60-90% of the leaks."

A. Including the 1975 study information that Eugene had infiltration and inflow (I/I) of 1,000± gpod(and Springfield had 850± gpod of I/I),and this may not have been known to the builder-engineer of the old Eugene plant, could account for the old plant not having treating capacity during winter rain and rainstorms. These are the times when the old Eugene plant was and does become overload, and during the cannery waste load in the late summer and fall.

B. The present Eugene population of over 100,000, multiplied by its I/I of 1,000± gpod, would have the old plant's capacity being washed-out with 100,000,000 gd, which is additional to the old plant's normal treating needs. No wonder the raw sewage is so extensively bypassed to the Willamette River from Eugene's three bypass pump stations to the river.

C. "The river elevation is the single most important thing affecting our storm and sanitary sewers..." is credited to Mr. Allen, who was associated with the old Eugene plant. During moderately high river level, even several feet below flood stage, the river backs up into the outfall pipeline from the plant.

1) CH2M Hill must have known this to have had a primary effluent pump station in the new plant plans, and the new plant's outfall pipeline has the same installed bottom-of-outfall-pipeline elevation as the old plant's outfall line. The MWMC has ignored this singularly important fact because that primary effluent pump was removed from the plant plans.

a) This is varified in the June 11, 1983 MWMC minutes, page 5: "Mr. Pye explained that CH2M Hill has submitted a proposal for design of increased capacity for the West Irwin Pump Station (built and in use since 1965) and force main. This system was impacted by raising the headworks of the (new) treatment facility when the primary effluent pump station was eliminated because of value engineering cost saving design recommendations." CH2M Hill would appear to have not been proposing the design "recommendations" for the elimination of the primary effluent pump station which was included in its plans.

b) Eliminating this primary effluent pump station from the plant plans has been/ is the largest influence in the new plant being not able to force effluent from the plant to the river when the river level restricts or stops the effluent from going to the river. This is a major "error".

c) CH2M Hill's 1975 study gives Springfield's I/I, adjusted to 1980 - as is Eugene's I/I, at 850± gpod. Springfield has the population of approximately 40,000 to Eugene's 100,000. Percentaging their gpods and adding the results gives the composite of 940± gpod for the whole sewered metropolitan area; 940± gpod multiplied by the design year estimated population which is to be sewered would be 296.108 mgd, then plus the year 2000 population peak sewage flow of 78.124 mgd, surely would wash-out this new plant's activated sludge process,which is less stable than the high-rate trickling filter old plants treating process, at 374.232 mgd against the new plant's peak hydraulic flow capacity of 153 mgd (153 mgd is said in the September 27, 1983 CAT meeting notes). This perspective makes no allowance for the instant peak flows from repeating winter rainstorms.

d) The instant peak flows would cause the bypasses of raw sewage to the river to be continued, just as is the problem now, and which was and is one main reason for building the new plant.

D. Though some I/I repair has been accomplished, those repairs have been to the trunk and collector sewer pipelines, leaving the "house to right-of-way" infiltrations unrepaired. They are the highest elevations in the gravity flow systems, so they are above the groundwater table in the low groundwater levels of the dry season and no rains to infiltrate. Those house to right-of-way infiltrating points become exfiltrating of raw sewage locations, which go into the groundwater and are then transported down-gradient via the aquifer flow channels into the RR-SC area's groundwater. The extent to which this occurs is substantial in degrading the RR-SC aquifer's water.

1) The 1978-1979 RR-SC Groundwater Study's raw data shows the sulfate buildup to be the most in Eugene's test site K X in August, which is dry season.

cont'd.

Eugene's test site K IX test site shows higest sulfate in December, as does its K VIII$_2$ test site, but its K VIII test site shows highest sulfate in May. These are wet season months.

2) RR-SC test site J IX shows highest sulfate in March. It is down-gradient from K X.
RR-SC test site J VI shows highest sulfate in December, down-gradient from K VII.
RR-SC test site H VII shows high sulfate in May and July, down-gradient from K X and J IX.
RR-SC test site G VIII shows high sulfate in January and July, down-gradient from K X, J IX and Eugene's trunk sewer line to the severage plant.
RR-SC test site G VI shows high sulfate in April and July, down-gradient from the above listed test sites.
RR-SC test site G V shows high sulfate in March and declining in May toward the sulfate reading of February, down-gradient from the foregoingly listed test sites.
RR-SC test site F VII$_2$ shows high sulfate in April and July, down-gradient from the foregoingly listed test sites in the north-northwest aquifer flow.
RR-SC test site F VI shows high sulfate in January and July.
RR-SC test site EVIII shows high sulfate in June, down-gradient from the sewer plant.
RR-SC test site E VII shows high sulfate in July, " " " " " " .
RR-SC test site E VI shows high sulfate in October and August, down-gradient in the main aquifer flow channel.
RR-SC test site D VIII shows high sulfate in June, down-gradient from the old plant.
RR-SC test site D VII shows high sulfate in November and May.
RR-SC test site D VI$_3$ shows high sulfate in April and May.
RR-SC test site D VI$_2$ shows high sulfate in January and May.
RR-SC test site D VI shows high sulfate in May.
RR-SC test site D IV shows high sulfate in November and June.
RR-SC test site C VIII shows high sulfate in November and July.
RR-SC test site C VII shows high sulfate in November and July.
RR-SC test site C VI$_2$ shows high sulfate in January and March.
RR-SC test site C VI shows high sulfate in October, November and July.
RR-SC test site C V shows high sulfate in October and May.
RR-SC test site C IV shows high sulfate in November and July.
RR-SC test site C IV$_2$ shows high sulfate in January and May - a surface site.
RR-SC test site C III$_2$ shows high sulfate in March - a surface site.
RR-SC test site C II shows high sulfate in November.
RR-SC test site C I shows high sulfate in November. The location is just east of the airport.
RR-SC test site B VII$_2$ and B VII show high sulfate in January and May.
RR-SC test site B VI and B VI show high sulfate in October, May and July.
RR-SC test site B V shows high sulfate in February.
RR-SC test site B IV shows high sulfate in October, November and June.
RR-SC test site B I shows high sulfate in November and May.
RR-SC test site A IV shows high sulfate for every month tested, except August. It is close to a cow barn.
RR-SC test site A III shows high sulfate in November.
RR-SC test site A I$_2$ shows high sulfate in November and May.

3) The above listed surges or crests of sulfate flow through and via the aquifer channels flows do indicate two and some areas three surges or crests during the one year test, with monthly readings/testings - when they WERE tested. The crests do indicate two to three sources of sulfate. The B IV test site is in the aquifer channel which has the highest changes in water level between the wet and dry seasons. It is also in the north-northwest flow pattern of the aquifer. This does indicate the sulfate is from RR-SC AND EUGENE'S leaking sewer lines.

4) Sulfate is used here because the nitrates in the groundwater were high-sided with the perpetrators of the study's use of the Cadmium test method and, with those nitrates containing heavy metals from the leaking sewer lines, the heavy metals-containing nitrates adhere to the sand in the aquifer channels.
   a) Studies have been made which show that sands do hold heavy metals, as do some low pH soils will hold pathogens.

5) The conclusion derivable from this is that the sewer lines exfiltrate raw and heavy metals-containing sewage to the RR-SC aquifer. This is sufficiently large in quantities as to be distinguishable in the groundwater raw data testing results. The high ammonia readings for Eugene's test sites K X and K IX convert to nitrite to nitrate in the aquifer's nearly 100 percent dissolved oxygen from the river and rains within a short distance. The raw sewage exfiltrating the ammonia does cause more nitrate formation than does the new plant's activated sludge process, which produces more nitrites and nitrates than do septic tanks.

4. The Eugene leaking sewer lines exfiltrate large quantities of raw sewage and industrial pollutants to the RR-SC aquifer. Sewering RR-SC will not help the environment to be rid of Eugene's pollutants which do extensively pollute the aquifer's water.
   A. EPA and DEQ funding for a new plant and not requiring full repair of exfiltrating sewer lines opposes their requirements to protect the environment.

Obviously, the installed septic tanks are the more environmentally acceptable alternative to the conventional and leaking of raw sewage sewer systems, which Eugene's system definitely does do, as does Springfield's sewer system.

5. The Eugene-Springfield-MWMC has provided a new plant with doubtful treating abilities and more doubtful peak hydraulic flow capacity.
   A. RR-SC is "planned" to be sewered with a peak hydraulic flow of 12 mgd. RR-SC now has approximately 25,000 residents; it is "planned" to have 80 percent increase in sewered population by year 2000. Its year 2000 is then approximately 45,000, as part of the total metropolitan area sewered population of new growth of 147,500. RR-SC is then 1 (one) part of its ratio to the total "planned" growth of 3.16 times the total RR-SC year 2000 population. RR-SC peak hydraulic flow of 12 mgd, when multiplied by 3.16, should provide the peak hydraulic load increase against the new plant at of 37.92 mgd.
      1) However, the new plant's peak hydraulic flow capacity is said by a Eugene Public Works employee, the same one who is on record pertaining to the extensive infiltration of house to right-of-way sewer pipelines and who appears to be substantially correct in that the plant is being built for the purpose to allow for such extensive infiltrations, to be 153 mgd. And, the new plant is to need 191 mgd peak hydraulic capacity by year 2000. 191 mgd minus 153 mgd is 38 mgd.
         a) The new plant being short 38 mgd for a peak hydraulic load increase of 37.92 mgd says that the growth since the plant was engineered at 153 mgd to-date should be into overload against the new plant, even before it goes on-line.
         b) The increasing infiltrations from the further deteriorating now installed sewer lines from the house to street right-of-way should also further overload the plant's peak hydraulic capacity.
         c) The INSTANT peak flows from rainstorms should also further overload this new plant's peak hydraulic capacity. This may have been the considered factor which has prompted the installation of a diffuser at the Willakenzie pump station, at the end of the East Bank Interceptor which transports -or it is supposed to transport all of Springfield's sewage to this pump station. The diffuser spreads the raw sewage bypasses for dilution in the river, just as the plant's outfall line diffuser will do.
            The cost of this bypass diffuser and the fact in its being placed at all does create the impression in which bypassing of raw or primary trated sewage is anticipated to be much more regularly utilized than MWMC's spokespersons are admitting. This indicates no-growth in all areas now sewered.

6. The October 1983 EPA Region X EIS, pertaining to the MWMC's Phase II sludge handling, discusses four options. The option/alternative 3 has the least environmental impacts. This alternative 3 is the same Phase I sludge handling which has been forced upon the MWMC with the delay caused by the need for the EIS.
   A. The persons involved in promoting this EIS appear to have protection of their environment in mind and actions, while the MWMC did not have environmental protection in mind when considering that MWMC is already on record as believing the Phase II Site C is OK with which to proceed. Site C is the more environmentally susceptable of the four alternatives. Hopefully, EPA Region X will make its dissatisfaction with such an erroneous conclusion become known to MWMC in the immediate future.
      1) The Phase I sludge handling equipment is understood to be moved to the Site C location, if MWMC is allowed to misuse that site. The misuse of Site C seems to include extra costs of land and utilities service which are now available on the plant-site. These extra expenses are considered to be the costs required by MWMC to have MWMC be in position to further assault our environment. If DEQ and EPA allow and fund this further fiasco against our environment, both should be rendered asunder or would deleting both agencies be sufficient? Not sufficient!
      2) This EIS also has that continuing Phase I through the design year 2000 would cause "..., the RWPT (new plant) wastewater treatment, sludge thickening, and digestion capacity would also have to be expanded." This is translated to mean that the new plant is not now even built to do the job of treating and peak hydraulic flow capacity, being dispensed to the public as being now in place. This translates to Site C and/or any other site being environmentally assaulted, other than on-site. Soil and water conservation has not yet included that farm land would be taken out of production and off the county tax rolls.
         a) Any off-site move would cause the county residents, who are not receiving "benefits" from MWMC's fiasco, to be in the position of involuntarily supporting the Eugene-Springfield-MWMC sewering complex; the Fiasco.
         b) MAC minutes for March 1981 contain the statement that the dewatering at the plant would have been necessary to decide before June 1978. Now, here is the Phase I intended to do the dewatering at the new plant-site. Some THINGS do NOT compare well. This is the condition which seems to dominate this plant project.
         c) This condition also appears to be operant to the Terry Street force main extension to the new plant. This force main is not needed; the existing-since-1965 West Irwin pump station and force main, while the pump is straight-line more than 50 percent worn out, is pumping more than 16 mgd.

This existing force main is capable in transporting approximately 33 mgd. All which is needed is to have the new pumps and the rebuilt pumps have the same smaller solids-clearance than the old pump(s) had and protect them with a screen small enough in mesh to prevent oversize solids from getting into the pumps(s). This would offset the error in the higher headworks. Logical reasoning provides the conclusion that CH2M Hill had this type of solution for avoiding the costs for the Terry Street force main. After all, the total amount of sewage to be transported to the plant is 25 mgd, not 33 mgd, from the west Eugene sewer project.

d) This EIS has on page 8 that Site C would take 125 acres of agricultural land from use. The Register-Guard's October 28, 1983 page 15C article has that "...The commission (MWMC) adopted a resolution designating an additional 125 acres south and west of 'Site C' as a potential location for the sludge disposal facility." This "additional" land more than doubles the loss from agriculture which the EIS considers necessary, and this more southern land is closer to the families who have been leaders in opposing MWMC's locating any facility for sewage over their only water supply source.

e) No logical reason exists to have permanent (11 more years) facilities be built on-site, when "temporary (5 years)"facilities on-site has been so environmentally the least objectionable. Use the old plant remaining components for storage over the winter; those remaining components could have been used for the seasonal wastes processing and avoided the potential misuse of Site A-1 for industrial toxics. The cannery waste single-line, not the required dual-line which was NOT installed, has large cylindrical components along that line which look as though they could be used as junction boxes for later connections from the industries which are in the area west of the line now, and more could be connected further north.

f) Using the old plant would have saved all of the funds wasted on Site A-1, which was not cost-effective, compared to overland flow, when it was built.

CH2M Hill was supposed to be the primary engineering firm for the sewer plant project. It has in the 208 Plan that land application of sewage sludge is too expensive and should not be considered further. Its admonition has not been utilized; this helps to explain how the old Eugene sewer plant's problems have been so exorbitantly costly to have continued in this new plant. Economic growth would have depended upon reliable sewer service all year around, and not having this is saying that no economic growth can occur and abide by state and federal requirements, when they are enforced.

Sewering RR-SC to this total mess would assure no economic growth in this whole metropolitan area. If RR-SC is not required to sewer to this new plant, its becoming a new city will give it the necessary chance to investigate and select alternatives which could lead to one area, at least, being able to attract economic growth. The Judco dryer is able to dry sewage and septage sludge. Connecting it to the O'Connor solid waste burner and converting the solid wastes and sewage/septage sludge to heat exchange gain, with steam turning turbines to power electric generators and the hot water condensate heating homes and greenhouses, would provide the cost-efficiencies necessary to attract more economic growth.

As was said by Mr. Jake Jacobson at the meeting last night, the new city of Santa Clara could not do worse than Eugene is doing. Perhaps better understanding of his references would be of value toward making correct allowance to have the incorporation process proceed.

1. Eugene charges three separate times on land square footage charges for storm and sewer system. Three times on development charges, which are for square footage of the total floor area and the square footage of the empermeable-to-downward-penetration-of-water surfaces; normally, the thought would occur that the floor area of the improvement charge would be sufficient, but the roof over the improvement also may be considered as being an impermeable surface, as would be the parking lot, sidewalks, etc. The funny-damn in all of these charges is that they are listed in Eugene Code as user charges, while the usual county property taxes are considered as "user" charges, which are also still charged against the land and improvement(s).
2. Where, outside Russia and such "backward countries",would the chairman of a boundary commission be challenged for ex parte contact with neighbors,who did not even know that he is a commisioner, on a subject of such import to all persons in the area being considered to form the new city of Santa Clara, where this commissioner lives?
   A. This was travestied by a boundary commission staff member, who is hired on contract for commission work from the Lane Council of Governments, which includes Eugene and Springfield. This appears to have the Eugene and Springfield members of the boundary commission to also be challenged.
      1) All of those members and staff, who live in Eugene or Springfield,also stand to become relieved of part of the new sewerage plant's costs, if the incorporation petition is denied, thus leaving the area subject to being annexed to Eugene and have to pay approximately $1,500 per household for the plant costs, plus a sewer system cost of $3,900 to $10,000 for a sewer system,to save them $200.

John C. Neely, Jr. - 1600 Horn Lane - 97404 John C. Neely, Jr.

for December 6, 1983

EPA meeting in the Springfield City Hall,
Re: Metropolitan Wastewater Management Commission's (MWMC's) Phase II Sludge
Management Plan's Environmental Impact Statement (EIS).

Page 5 of this EIS on Phase II of MWMC's Sludge Management Plan has, "EPA could offer funds for ... some combination of processing and reuse/disposal methods not considered in a single alternative described in the EIS or Sludge Management Program. Although this is unlikely, it could be done for environmental or econmic reasons." If this is not double-speak, EPA is saying the likelihood of such alternative(s) would be substantially increased when environmental AND economic reasons are correlated.

This correlation exists via combining the O'Connor solid waste burner with the Judco Dryer. O'Connor's solid waste burner is structured to utilize the heat from burning solid wastes to heat water to steam, which is then available to turn a generator for production of electricity or perform other work from heat exchange for economic gain. The ash from the burning should also provide for recovery of the heavy metals which are in the sewage sludge. This would avoid their hazarding the land and aquifer potable water supplies under that land.

This process is most economic for local bonds payers and federal taxpayers. It will also serve to protect the environment. Mr. Jud Buttner and Mr. O'Connor are teaming their expertise and inventions for the purposes in attaining the environmental AND economic recovery of resources. These two engineers are directly and indirectly assembling the solution to many of EPA's present and future impasses in environmental protection with providing this process for utility economically. All which is needed is to have the EPA burn its biases, which produces open-mindedness, before starting to study this correlated mechanical combination.

Mr. Buttner has said that EPA is relaxing its public domain requirement. This is a late correction, but it is better than no correction. EPA Region X should also make every effort to obtain their new, correlated brochure when it becomes available, which is expected to be soon. Study it, see the record of low particulates, non—wear and reliable performace characteristics, then invest a few thousands of dollars to save many millions of dollars and save our environment for US.

This mechanical combination, which was portable as just the Judco Dryer and could be portable in a smaller combination, could be put to work at any solid waste dump site, such as Short Mountain, for its initial testing and performance verification. While it is there, process the whole mountain of landfilled solid wastes.

All thinking persons are able to associate the fact that this process will displace need for the very expensive sand filtration, which was removed from this activated sludge process plant's plans because it does not retain heavy metals and toxic chemicals. These can now be recovered from the ash residue, those which have not recombined to non-harmful substances via pyrolysis and incineration.

Incineration is an end-product of pyrolysis: chemical decomposition or other chemical change brought about by the action of heat regardless of the temperature involved. Pyrolysis and incineration are both listed in this EIS's page 3-5's chart for Base Sludge Utilization/Disposal Options as being acceptable as base alternative components.

These two engineering specialists are innovative, so the funding for this machine they are combining for utilization of wastes should be at the extra 10 percent for innovative and alternative technology. It is an excellent solution to present and anticipated trespasses against our economy and our environment.

Mr. Buttner and Mr. O'Connor are congratulated for their expertise and their cooperation producing the solution for protecting our environment and our economics.

Naturally, their solution eradicates need for any further grants for application to land and, because the soils in this area are not sufficiently acid to hold the pathogens nor sufficiently alkaline to hold the heavy metals or toxic chemicals from sewage sludge in the soil mantle, penetrating laterally and vertically to polluting the potable aquifers. This means that Site C, Prairie Road site, Coburg site are not necessary to become contaminated.

This perspective definitely does recommend continuing Alternative 3 until the Judco Dryer and O'Connor solid waste burner is installed and becomes operational AT THE PLANT SITE to then obviate need of any further grants from EPA, from the federal taxpayers money. Eugene's and Springfield's MWMC has sufficient bond funds remaining to install this unit, rather than dissipate more funds to further attack the land, the aquifers and the peoples' environment.

EPA could withdraw its funding of the Terry Street force main project beyond its extension to and connect into the pressure side of the existing West Irwin force main as a funding source for installing the Judco Dryer and O'Connor solid waste burner on the new plant site. Page A-3 has in paragraph three that, "NPDES permits for wastewater treatment plants include sludge disposal conditions where possible,..." This is possible, and Alternative 3 should be continued until this becomes reality.

Funding the Terry Street force main beyond tying into the existing West Irwin force main appears to be extraneous because the repair of the West Irwin pumps, which are straight-line now worn more than 50 percent, and the new pumps could also be with the next size smaller solids-clearance with smaller mesh grids ahead of them to stop solids larger than will clear the solids-clearance, are pumping more than 16 mgd in this condition. One hundred-percent-function pumps of the smaller solids-clearance would be expected to move more than 33 mgd through the existing force main even with the fifteen-foot more pressure head from the elevated plant headworks. Only 25 mgd is planned to be needing transport to the year 2000, leaving approximately 7.5 to 8 mgd reserve capacity even under the most optimistic anticipated growth.

The comparison for the existing West Irwin force main's 30-inch diameter being able to transport 25 to 33 mgd is in the East Bank Interceptor's 103 mgd engineered to go through the Willakenzie pump station 54-inch force main to the new plant and its 15-foot higher headworks. The blue MWMC pamphlet just received in the mail says that, "The objective of the improvements (West Irwin Pump Station) is to increase pumping capacity." MWMC-Eugene appear to be using the more expensive means to do the job.

The pumping capacity increase will be accomplished with reducing the rebuilt and new pumps to the smaller solids clearance than was used for the transport of sewage to the old Eugene plant. The West Irwin force main's 30-inch diameter pipeline has the cross-sectional area/25 mgd of 28.4 to the EBI's Willakenzie force main's 54-inch diameter pipeline cross-sectional area/103 mgd of 22.2, which indicates that the West Irwin force main, now in use, will transport 25 mgd with less friction-loss than would be active when the Willakenzie force-main-to-the-new-plant is transporting 103 mgd. Keep in mind that the 54-inch diameter Willakenzie force-main has an additional 14-to-16 years more engineering experience-level for design capacity than had the West Irwin force-main.

This engineering experience-level-more also indicates the new plant's original plans were more accurate for the job than would the plant be after it had several of its components removed. This EIS's page 139, paragraph 3 has that Facultative Sludge Lagoons (FSLs) function as secondary digesters. The two secondary clarifiers, which were removed from the plant's original plans, could have been utilized as secondary digesters on-site, rather than having to have the extra costs and environmental hazards involved in having to go off-site to construct FSLs/ secondary digesters.

Obviously, the EPA has accomplished a commendable job with its EIS showing that Alternative 3 has the least environmental impacts and it must be utilized to fulfill the requirements for which the local and federal funds were intended to accomplish - protect the environment. However, at the 7 to 8 AM MWMC Advisory Committee (MAC) meeting, just yesterday, the majority of members present did vote to recommend that Site C be recommended to EPA. Those persons voting for this have transgressed:

1. The EIS page 132's "All reasonable attempts should be made to avoid any additional nitrate and bacterial contamination of the groundwater and to control existing sources of contamination if groundwater is going to be a continuing source of drinking water for residents in this area." The groundwater definitely is to be the ONLY continuing source of drinking water for residents in this area and in any other off-site area.
2. The EIS page 133's "The drying process tends to concentrate nonvolatile substances in a given volume of sludge, including heavy metals and some toxic organics."

When considering the bar graph Industrial Flow (MGD) CONCENTRATION INCREASE to PRESENT FLOW of the eleven listed toxics on this page, which accompanied the MAC minutes for April 15, 1981, and to the estimated domestic flow dilution, this off-site drying process would compound those toxic pollutants concentration by the same ratio as that of the removal of moisture, which then pricipitates environmental hazard increase against that sole source drinking water supply. And:
"More serious health threats to these water supply wells would come from flooded septic systems and leaky sewers that contain raw sewage." Septic tank systems do NOT emit raw sewage because they are air and water tight. The septic system's effluent is treated anaerobically and, according to the July 1982 North Carolina Septage Study, there is considerable doubt that septic systems emit sufficient organisms to cause disease conditions. This is in sharp contrast to this study's conclusion as it pertains to the activated sludge process, which is that activated sludge process does create endemic to epidemic disease conditions when this sludge is land applied.

This EPA EIS does substantiate this study's conclusion. Yet, the MWMC majority of MAC-person representatives present at yesterday morning's meeting have indicated extensive disregard for their down-gradient neighbors' continuing good health. This also applies to Eugene not repairing its leaking sewer lines, of which the house to street right-of-way sewer pipelines infiltrate "60 to 90% of the leaks" and which are considered to be not cost-effective to repair. They are in the highest pipelines of the gravity flow sewer systems, so they only infiltrate during the rainy and high groundwater seasons. They exfiltrate raw sewage during the dry and low groundwater seasons. Therefore, these exfiltrating sewer lines non-repair are causing "More serious health threats to these water supply wells..." This ongoing and can-only-worsen situation is to be compounded with land application of sludge from an activated sludge process plant.

To what extent are the majority persons in the agencies and other promoting of environmental hazards placements organizations liable as accessories-after-the-fact when violence by the persons being hazarded results in injury or death to any of those hazards placements promoting persons? In the past, many deaths have occurred over disputes which pertain to water. When a sole-source potable water supply is to be threatened, whose life or health is hazarded becomes a factor to be considered in all decisions adversely affecting that water supply. The federal funds are meant to reduce this additional hazard, not increase it.

EPA's funding only the Alternative 3, until the Judco Dryer and the O'Connor solid waste burner combination is installed and operational, will certainly reduce the potentials in adverse reaction potentials which could accompany funding any of the off-site locations being considered in this EIS.

Those of us who are active in this process of selection, and who live in this River Road area where the new plant is located, did not want to have this new plant be located in our residential area. However, now that the new plant IS in our area, the general consensus is to have the "... wastewater treatment plants include sludge disposal conditions where possible,..." This is possible; it is even probable. The complimentary result will be the numerous residents surrounding this plant-site area will be the ones who are in the most advantageous position to assure that the plant's performance potentials are fulfilled,and that its pollutants are not hazarding our down-gradient neighbors' sole supply of potable water.

Even Eugene's residents, since the plant site has been recently annexed, will also help assure the environmental factors are fulfilled. This is the primary function for which local and federal funding were intended by U.S. Public Laws 92-500 and 95-217. The-chicken-will have-come-home-to-roost when the EPA only funds the Alternative 3 and the Judco Dryer and O'Connor combination, all AT THE PLANT SITE.

EPA may contact MR. Jud Buttner at (503) 747-3315. His mailing address is 40303 Deerhorn Road, Springfield, Oregon 97477 for his soon-to-be-delivered new brochure pertaining to details on these two engineers combined efforts to help solve the ongoing and worsening pollution problems which hazard more and more now healthy people.

John C. Neely, Jr.
John C. Neely, Jr. - 1600 Horn Lane - Eugene, OR 97404

Ms. Ernesta Barnes,
Administrator,
Ms. Norma Young,
EIS Coordinator,
Mr. Thiel,
Hearings Chair, Draft EIS on MWMC's Sludge Management, last night.
1200 Sixth Avenue
Seattle, Washington 98101

December 7, 1983

Re: M/S 443

Last night's hearing's Part One went as-usual, its Part Two's public testimony is ALL in opposition to off-site sewage sludge handling - placing - treatment; the only ones favoring flinging-the--"stuff"-over-the-fence were the ones who appear to be trying to convert a "bed pan" to a "potty-with-bail-for-flinging". Part Three, question-suggestion-answer period, developed more questions than for which answers, satisfactory ones, were provided. Some answers provided were not satisfacory nor accurate.

One question asked was related to the rate of groundwater flow in the Site C-Prairie Road Site. The answer given by Brown and Caldwell's representative was 200 feet per year. This answer by him appears to be based in some relationship to nitrates-plume flow in the general River Road/Santa Clara area from Sweet's reports. Using or misusing the 1978-1979 RR/SC Groundwater Study's nitrate-plume flow is one more of the major errors being employed to arrive at very faulty conclusions. This study's Raw Data sheets, the information in them being the basis upon which Sweet's reports should have been based - as well as that of B & C's representative, provide extensive contrast information.

Sweet's RR/SC Groundwater Final Evaluation's Plate B map of test sites locations, having the scale of 1,000 feet equal 7/32s of one-inch, were transferred to a map of the general area which has the scale of one mile equals 1 5/8s inches. The Raw Data shows sulfate as one of the other-than-nitrate components of the groundwater for which quality numbers are provided. Sulfate is integral in the groundwater with nitrate. However, sulfate speed of migration with the groundwater flow definitely does disclose a much faster groundwater rate of flow than does nitrate-rate-of-flow.

From Eugene-area K X test-well-to-RR's-J IX test well is 3/4-inch, which is 6/8ths-inch or 6 x 5,280-ft/13(8ths-inch), or 6 x 406.1-feet, or 2,436.6-feet. Sulfate did travel this distance, from its high reading in August (a dry month) from K X to J IX's high sulfate reading in April (a wet month) in approximately 6 months, or sulfate did travel in the groundwater for a distance of approximately 4,873 feet in one year. However, only one sulfate reading is listed in the Raw Data for the whole year of testing (only two readings for nitrate for J IX are listed for the whole year of testing - for excuses said on its test sheet, which are extraneous to this point), so from Eugene's K X test well to Eugene's K $VIII_2$ test well is 5/8ths-inch on this same general area map. Sulfate moved from August at K X to December at K $VIII_2$ high reading a distance of 2,030.5 feet in four months, or approximately 6,061 feet in one year, or more than one mile.

Obviously, the groundwater flow is much more than 200 feet in one year. This does cause the question of why does nitrate-plume only move 200 feet in one year? ~~and~~ why is there a nitrate-"plume" at all? This DEIS says in several references that nitrate moves freely with the groundwater flow. However, the nitrates in this groundwater test do not move-freely-with-the-groundwater-flow, or so the Sweet Reports indicate. The accurate answer for both questions reason to be based in the fact that the July 1982 North Carolina Septage Study, which is conspicuous by ITS ABSENSE from the list of references stated for this DEIS, says that heavy metals are not retained in the soil mantle when the soil mantle's pH is 6.5 or less, which says that heavy metals are held in the soil mantle when pH is greater than 6.5. And other studies show that sands hold heavy metals and toxic organics.

This DEIS shows that the groundwater is more alkaline than 6.5 pH, and core samples show gravel and sand to be in the groundwater aquifer channels. This DEIS also shows that heavy metals and toxic organics remain with the nitrates in the sewage sludge. So, the groundwater aquifer channels' sand and higher-than-6.5-pH are retarding nitrate movement to 200 feet per year, which forms the "plume" and says that heavy metals are in the groundwater, which question is then: what is the source of the heavy metals?

The answer is, again, obvious. The fact in the choice in the Raw Data being the nitrate precipitate method with cadmium, and the cadmium precipitate method then producing higher nitrate readings of 5.5 percent to 100 percent more than has been produced with the alternate and comparable method for establishing nitrate in water, definitely proclaims and establishes that cadmium was in the groundwater AT THE TIME OF TESTING. When both test methods were used on the same well or test site on the same date, the obvious answer is that both tests were made from the same sample of water from that test well or site.

Domestic sewage does not contain measurable amounts of cadmium. Industrial wastes do have measurable quantities of cadmium. Cadmium is in the urban industrial sewage wastes in Eugene, together with ten other known toxics of concern. This says that all eleven of these tested-for-in-the-sewage-from-Eugene are in this domestic on-site system groundwater, because these toxics are from the sewer lines exfiltration places in the dry and low groundwater level as are the infiltration places in the sewer lines during the rainy and high groundwater seasons. The fact in the September 27, 1983 River Road/Santa Clara Urban Facilities Plant Citizen Advisory Team (CAT) minutes saying that the new plant is being built because the two old sewerage plants do not have peak hydraulic flow capacity for all of the infiltration and inflow, and that 60-to-90% of the I/I is from the toilets, and the other normal inlets of waste to the sewer system - such as industrial toxics and heavy metals, to the street right-of-way do establish that domestic sewage - raw - and toxic industrial wastes migrate into the RR/SC groundwater. The sands in the aquifer channels and the groundwater pH being more than 6.5 then hold the heavy-metals-laden nitrates and have formed the so-called "nitrates-plume" in this RR/SC area's groundwater, together with the lesser amount of nitrates normal to domestic sewage effluent from on-site systems.

Prothero's 1975 Thesis says that on-site anaerobic systems produce less nitrates than do the aerobic systems, such as are the trickling filter and activated sludge systems of central sewage and industrial wastes processing plants. This DEIS also says that anaerobic digestion of sewage produces less nitrates than aa-aerobic sewer plant processes. This DEIS also says that nitrates are added as odor control, which would then produce more nitrates in the groundwater under the land upon which such sludges are land applied, together with the heavy metals and organic toxics in that urban, industrialized sewage sludge. Nitrates are supposed to be the concern of EPA.

Mr. Lowenkron made the remark that, when pH is less than 6.5 in the soil, less of the sludge is applied. This does not agree with the North Carolina Septage Study. It does indicate that NO heavy metals-content sludge shoud be applied to land with less than 6.5 pH. Again, the North Carolina Septage Study is conspicuous by its ABSENCE from this DEIS's references. Prominent in this DEIS's references are statements made by the persons who have caused the affected and concerned citizens to have caused this DEIS to be performed.

Would Mr. Lowenkron, if asked, have said that less sludge would be applied to land which has a pH of more than 5.0 when the sludge contains pathogens, etc.? Probably. If so, this would appear to be another "error", particularly when considering the presentation made by Springfield City Councelor Fred Simmons. His admonition to reevaluate methods now employed has more recent knowledge than appears to have been employed by this state's authorities to have Oregon be at three times the national average hazard from waterborne diseases. This DEIS also refers to no harm coming to healthy persons. This DEIS says that harm can come to those persons who are not healthy. How would they have become unhealthy? Via the groundwater becoming so polluted as the result from inefficiencies and/or indifferences of authorities?

"Government is a trust, and the officers of government are trustees; both the trust and the trustees are created for the benefit of the people - Henry Clay." Please notice that Henry Clay does not say for officers of government to tryst to the detriment of the people.

Dry sewage sludge to 50 percent solids in the Judco Dryer and then burn it, with other solid wastes, in the O'Connor solid waste burner to produce heat exchange gain "... for the benefit of the people.", their health, their environment.

The B & C representative responded to Mr. Elliott's favoring this burning of wastes with the remark that it is not cost-effective. He also said that heat exchange gain of up-to four times the heat required to dry the sewage sludge and other solid wastes prior to burning it to produce energy would defy the first law of thermodynamics.

Is Mr. Kreugel (?), the B & C representative, a bit confused? Is the first law of thermodynamics that energy is not destroyed, that it is just transformed? If this is not so, then many scholars have studied the wrong references. He, as an employee of a company which is employed by officers of government, is acting in the stead of officers of government or in conjunction with officers of government. This does say that he is supposed to be bound by the trust assigned to officers of government and that all decisions are to be "... for the benefit of the people." His perspectives appear to be very similar to those of Mr. Pye. This DEIS has been promoted by the people, so they appear to be objecting to the perspectives of Mr. Pye and to the similar perspectives of all other employees of officers of government.

Neither of these two employed-by-officers-of-govenment persons have been read to have utilized a more realistic rate of HR/SC-Site C or Prairie Road Site or even at the Site A-1 groundwater flow with comparing the groundwater flow rate indicated in the newspaper articles pertaining to the spilling of toxic formaldehyde in the Russian River, northern California, on March 26, 1982. On March 27, 1982, "Officials urged people not to use water from wells within 100 feet of the Russian River until they are tested for formaldehyde,..." On March 28, 1982 the AP article has, "About 1,000 residents in Guerneville were asked to close private wells within 400 yards of the river..." This change in groundwater rate of flow expectation was increased by 1,200 percent, for a difference of 1,100 feet more in one day. 1,200 x 365 = 538,000 feet in one year, or more than 100 miles in one year. Viruses and bacteria are also reported to have fast movement in groundwater.

At the meeting last night, Mr. Richard Thiel commented that pollutants could be removed from slow-moving groundwater by pumping it out, cleaning it up and return it to the aquifer, but this could not be done with fast-moving groundwater. Therefore, the actual, rather than assumed, rate of groundwater flow must be established before any resulting decision could be valid for pumping-to-clean an aquifer. This aquifer being pumped out would be a waste of money and create a false sense of security when the causal factors of exfiltrating sewer lines have not been terminated. They are to not be repaired because their repair is said to be not cost-effective.

The exfiltrating of raw sewage and toxics of several known named kinds, plus the probability of those unnamed, because MWMC requested that only the eleven listed toxics be tested for, being hazards to the groundwater during the dry and low groundwater seasons, would continue to degrade the aquifer as a drinking water source. This is very similar to applying activated sludge process sludge to land in this general area, which has the pH ranging from 5.0 to 6.5. It acts as a "funnel" for all of the pollutants to go through the soil mantle and into the aquifer. This amounts to there being a major "leak" in a sewer line to the groundwater, or many such "leaks".

This DEIS also calls the sludge from this activated sludge process "digested", while it also addresses odors from the product of this process. Saying it is "digested" is not a fact when odors are associated with it, because it is not even near the humic status of a digested-anything. Activated sludge is the just prior step to fulvic acids in the "Ultimate analyses of organic materials in the fossilization pathway (in dry, ash-free weight percentages).", while humic acids are midway between activated sludge and the ultimate increase in carbon content of 96 percent in anthracite coals.

"Fulvic and humic acids consist mainly of complex hydrophilic polyelectrolytic polymers of benzene rings that are variously substituted, partially to completely (which can be equivalent to saying fulvic as partially and humic as completely), with either or both phenolic and carboxyl groups, together with large amounts of aliphatic carboxylic acids; up to about 70 percent of humic and fulvic acids may be made up of these subunits (which could explain their similarities but not their odors differences), which form water-soluble and water-insoluble complexes with metal ions and hydrous oxides and interact with clay minerals and hydrophobic organic compounds such as alkanes. About 10^{18} stable free radicals are found per gram of humic or fulvic acids. Fragmentation patterns derived through mass spectrometry reveal remarkable similarities between soil humic acids, model humic acids, composted straw, peat, and melanins (humic substances secreted by fungi). Many of the chemical and spectroscopic properties of model humic acids are also indistinguishable from those of soil humic acids and melanins....... the reaction period required for the production of humus in nature is unknown. Humic acids differ from fulvic acids in having larger molecular weights and from humins(the alkali-insoluble component of humus) in having smaller molecular weights.

"Fulvic acids undergo a considerable amount of demethanation(possibly preferential losses of methylene) in being derived from foodstuffs. Moreover, in the event that they are precursors of humic acids, they lose an appreciable amount of carboxyl en route; this is in line with the analytical data. Fulvic and humic polymers are linked with amino acids, carbohydrates, peptides, and amino sugars, probably through bonding of nitrogen to carbon on a phenol or by quinimine formation, as well as possibly through peptide linkages, and by way of the thioether linkage of sulfur to ring carbon."(re: Sludge Decomposition and Stabilization - Roy Hartenstein, SCIENCE, May 15, 1981, Volume 212, Number 4496, pp. 743-748)

And, "In view of this and because humified material appears to be nonamenable to putrescence, it appears proper to say that sludge is stabilised when it becomes humified." This is far down the carbon cycle from "digested" sludge, so the use of the term "digested", that of reduction for ready use or application, or to subject to or transform by digestion, is most misleading when not sufficient negative ions have been returned or transferred to the results of such "digestion" to prevent reverting to putrescence. This "digested" sludge has not progressed from the stage of putrescence and the misuse of polymerization as a "packaging" of putrescence at the plant is then transferred to land application, and misuse the land as part of treatment plant and expose the people to this harming of their potable water aquifer; this is all most foreign to-benefit-of-the-people.

The thioether linkage of sulfur to ring carbon would be expected to occur in the groundwater's reduced oxygen ion transport after exfiltrating raw sewage has reduced the negative ion concentration of the rain and river recharge from nearly one hundred percent dissolved oxygen ion transport. This should explain why the groundwater tests showed sulfate movement to be much faster with the groundwater flow than nitrates flow, particularly when considering the nitrates to be "tethered" to the sand via the heavy metals.

That "Fulvic acids undergo a considerable amount of demethanation in being derived from foodstuffs." is evidence that the B & C representative appears to have ignored as a source of additional heat exchange gain when burning the "digested" sludge. This is also a form of testimonial as to the only-partial-digestion derived from activated sludge process. Additionally, as the plant's capacity becomes further overloaded, the only-partial-digestion is further reduced, which leaves more methane in the sludge as being more indicative toward putrescence occurring upon land application. If this type sludge is dried and then burned, the heat exchange gain would be increased via the presence of the additional methane-producing potential. The dryer could be "hooded" to capture this methane for work conversion, if it is shown to vent during the drying process. This would also contain reasons for processing the cannery wastes at/in the old Eugene sewerage plant.; the residual sludge, only-partially-digested, should be an increased source of heat exchange gain and reduction of costs from operation of the old plant for the few months during which the cannery produces fractions from foodstuffs.

The "engineers" on this new-plant project and components appear to not have had the benefit of chemists nor physicists in this plot, plan or project. Opportunities for heat exchange gain should have been explored and be incorporated with components which do provide heat exchange gain, such as the Judco Dryer and the O'Connor solid waste burner. When opportunities for protecting the environment and make the whole processing of sewage less exorbitantly expensive to the user-public and the federal government are ignored, the officers of government are not performing the trust to the benefit of the people.

The domestic sewage is derived from foodstuffs and it is planned to be approximately one hudred percent more by the year 2000, so heat exchange gain would be incremental. A hand written note is included with the Raw Data of the 1978-1979 RR/SC Groundwater Study. Above the listing of eleven toxics and their characteristics is a blocked-in "Note: Total present industrial flow = 2.6 mgd. Year 2000 projected industrial flow = 5.1 mgd. Projected industrial flow increase = 2.5 mgd.", which compares satisfactorily with domestic flow increase for dilution. It would, however, provide for doubling the mass of toxics going through the plant, to the land, and into the aquifer - a sole potable water source. Dry the sludge, burn it, obtain heat exchange gain, and help to protect our environment. Protecting our environment is supposed to be THE requirement.

This hand written note is titled "Effluent limits comparison". Its Toxic, Arsenic (As), is listed as Present Qp (mgd) being 0.14 and Present Qp, + 2.5 mgd, as being 2.64; this shows an increase in As of 2.64/0.14, or 1,885 percent. Its Toxic, Cadmium (Cd), is listed as Present Qp (mgd) being 0.05 and Present Qp, + 2.5 mgd, as being 2.55; this shows an increase in Cd of 2.55/0.05, or 5,100 percent. Its Toxics: Lead (Pb), Nickel (Ni), and Cyanide (Cn) are listed as Present Qp (mgd) being 0.13 for each of them and Present Qp, + 2.5 mgd, as being 2.63; this shows an increase in Pb, Ni, and Cn of 2.63/0.13, or 2,020 percent. These are examples to compare to the bar graph, of these same Toxics, which accompanied the MWMC Advisory Committee (MAC) minutes of its April 15, 1981 meeting.

These minutes have on page 2 that, "... Al Peroutka had written the report, and that it had come from their research in trying to develop a logic for establishing pretreatment standards or limits.

"Cook then directed the Committee to a chart which had been handed out (attached and made a part of these minutes). He explained that this showed the method used to take the arbitrariness out of the development of standards. He said that by selecting a flow (those shown were based on the year 2000) one could pick off a concentration that will utilize 100 percent of the allowable industrial mass. Cook added that it was a good tool to see where to establish a flow and see how it affects the concentrations.

"He further explained that the table assumes the growth from 1980 to 2000 will be approximately 2.5 million gallons per day (mgd), and reiterated that half of that growth will occur in each of the toxics. This amounts to 1.25 mgd in each of the toxics. Rather than have industries adjust every year, Cook said the engineers thought it best to plan for anticipated growth. Assuming all projections are maintained, the figures should be valid until the rear 2000. Cook noted that the figures shown in the handout material used current data.

"A concern was expressed about the engineers' ability to accurately forecast the future in terms of industrial growth, and Cook said that responses received from industrial representatives indicated that they would prefer a reasonable guess on concentration and mass limits rather than new figures every year.

"Cook noted that the Eugene-Springfield metropolitan area is probably one of the first to use a logical approach to create limits and standards. Most other cities use what other cities are doing. Ed Wilson added that a lot of cities adopt drinking water quality standards or use 10 or 100 times that figure as their standards for industry. He said he felt the MWMC engineers' approach was very well done, as there was a 50 percent growth pattern built into the program.

"Jeff Siegel questioned whether concentrations would drop as the flow increases, and Cook said that was correct because the mass is held constant. He said that Mass - Concentration X Flow, so that anytime the flow is increased, to keep the mass constant, the concentration must be increased.

"Cook explained that Peroutka's original concept for a pretreatment program had proven infeasible as the it was too sensitive to flow; the engineers then tried a 'total flow' concept, on which their current recommendations are based. This concept is based on actual industrial growth in the Eugene-Springfield metropolitan area.

"In response to a question from the audience, Cook explained that in reality the flows with the concentration shown on the table will utilize 100 percent of the allowable mass. He reiterated that most industries will be able to meet these limits, and that they are technologically achievable." (end of its page 2)

This "table" or "chart" is titled "EFFLUENT TOXIC CONCENTRATION, A FUNCTION OF INDUSTRIAL FLOW". Its line graph is for EFFLUENT CONCENTRATION (MG/L) of the eleven Toxics out of 129 potential toxics of concern. Its bar graph, INDUSTRIAL FLOW (MGD) has PRESENT FLOW marked in shaded units and its CONCENTRATION INCREASE is extending those bars across the grid units without shading. "Present Flow" of Arsenic (As) is one-half (1/2) grid unit; its "Concentration Increase" of As is twenty-five more grid graph units. This results in As increase of 50 times its present flow, or 5,000 percent, as compared to the hand written note's 1,885 percent.

Its "Present Flow" for Cadmium (Cd) is approximately three-fourths (3/4) grid unit; its "Concentration Increase" of Cd is approximately (24 ½) twenty-four-and-one-half more grid graph units. This results in Cd increase of 32.66 times, or 3,266 percent, as compared to the hand written note's 5,100 percent.

Its "Present Flow" for Lead (Pb) is two and one-half grid units; its "Concentration Increase" of Pb is twenty five (25) graph grid units. This results in Pb increase of 10.0 times, or 1,000 percent, as compared to the hand written note's 2,020 percent.

Its "Present Flow" for Nickel (Ni) is the same as for Pb and its "Concentration Increase" for Ni is the same as for Pb. This results in Ni increase of 10.0 times, or 1,000 percent, as compared to the hand written note's 2,020 percent.

Its "Present Flow" for Cyanide (Cn) is one and one-quarter grid units; its "Concentration Increase" of Cn is twenty five and one-quarter more graph grid units. This results in Cn increase of 20.2 times, or 2,020 percent, which is exactly the same as comparing the hand written note's 2,020 percent.

These four examples demonstrate that considerable adaptations have been rendered between the two: hand written reference and the graph grid bars. Neither of these references agree with any intent to limit toxics concentration or mass of toxics. The "engineers" are correct in that "... most industries will be able to meet these 'limits', and that they are technologically achievable." Anyone should be able to technologically be able to qualify as an "engineer" just with pouring more toxic pollutants into a sewer, or into anything else: such as on land and into the aquifer, which is the sole source potable water supply for many now-healthy people. However, they will not be healthy for much longer.

Compare that Mr. Terry Smith, an employee of the Eugene Public Works Department, is on meeting tape record of the CAT to have responded essentially that, if Cadmium was in the groundwater to the extent indicated by the use of the Cadmium precipitation of nitrates method produced 5.5 to 100 percent more nitrates than with the comparable other, Bgl,method, deaths would occur. Consider the "100 percent" as that which would produce death; then Cadmium increase of 32.66 times, as is indicated in the bar graph, or 51 times, as is indicated in the hand written note, would produce death nearly instantly. Keep in mind that the general consensus among scientists is increasingly tending toward there not being a threshold at which Cadmium will not do harm to living cells and organisms. The fact that animal and human life is comprised with and composed of these organic cells and other organisms should have caused decrease from PRESENT FLOW or CONCENTRATION of TOXICS to protect these cells, organisms and human/animal life.

Such dramatic increases of toxics concentration, as is foregoingly indicated and compared, should be able to be easily traced to their causal factors from the sewage sludge applied to that land and into the aquifer, and into the living cells and organisms of animal and human life and cause them to instantly, or nearly instantly, cease to function. These results would cause such exorbitant cost increases against the then-sewer-users as to have been much more cost effective to have dried and burned the sewage sludge as the base component of the sewage treating process. DRY IT AND BURN IT!

And, "Cadmium is a toxic trace mineral that has many structural similarities to zinc. There is no biological function for this element in humans....Dr. Henry A. Shroeder, a trace mineral researcher, has developed a theory about cadmium being a major causative factor in hypertension and related heart ailments... The liver and kidneys are storage areas for ... cadmium..." (Nutrition Research, Inc.'s NUTRITION ALMANAC, pp. 62-63) "The body's ability to use zinc is hindered by cadmium,...It is believed to contribute to high blood pressure, cardiovascular disease, and kidney disease." (Robert D. Gutting, Minerals, pg. 4)

So, many humans, who would be drinking such heavily increased pollution of their water supply aquifer, are now predisposed to cessation of cells and organisms functions from even slight increase in cadmium concentration. This exists when just considering this one toxic mineral. How much more devastating will this be when all of the adverse reactions from the known toxics and heavy metals increases in this sludge are considered together? Answer: much more devastating.

Consider that the dilution with domestic sewage flow was figured from ah experience-level constant, or nearly constant, from Eugene's 240 gallons per capita per day (gpcd) in 1980-1981. Its gpcd is now said to be reduced to approximately 79 gpcd. This is then concentrating the toxics by another six (6) times. This DEIS says that toxics do increase more with the off-site drying-of-sewage-sludge process. MWMC is planning to misuse any off-site location to cause such compounding of toxics hazard. EPA must NOT allow this to occur. DRY IT AND BURN IT! ON THE PLANT SITE! This perspective should cause EPA to demand refund of its grants funds and provide for finders-fee with such recovery of those funds. They appear to be producing opposite to their original intent.

How the procession of events turned from benefitting the environment and economy to harming both is explored chronologically. Page 2 of the April 15, 1981 MAC minutes, quoted on page 5 of these comments, show that Mr. Peroutka had written the report and that Mr. Cook is credited with having said that "...Peroutka's original concept for a pretreatment program had proven infeasible as the (sic) it was too sensitive to flow; the engineers then tried a 'total flow' concept, on which their current recommendations are based." This appears to clear Mr. Peroutka, except for possible participation in developing this "total flow" concept presented by the engineers.

Page 5 of the MWMC Newsletter for April-May 1981 has, "Peat, Marwick, Mitchell & Co, the Commission's (MWMC's) pretreatment consultant (the word 'engineers' is not used here), has asked for input from MAC and the Technical Advisory Staff concerning methods for developing prohibitive discharge standards for local industries. MAC held a special meeting on March 18 to consider these questions and will continue the discussion at its regular meeting April 1 and at another special meeting April 15"(1981). The quoted page 2 is from that April 15 meeting of MAC. This April-May 1981 Newsletter continues with "Representatives from industrial firms in the Eugene-Springfield area are welcome to attend MAC meetings and contribute to the discussions."

Representatives from industrial firms in the Eugene-Springfield area participated wih input, because this MAC meeting minutes page 2 has, ",...Cook said that responses received from industrial representatives indicated that they would prefer a reasonable guess on concentration and mass limits rather than new figures every year." How they appear to have departed so radically from protecting the environment is also on this quoted page 2 in "He (COOK) said that Mass = Concentration X Flow (this writer's background of reference indicates this chemistry-physics formula to be correct), so that anytime the flow is increased, to keep the mass constant, the concentration must be increased."

Mr. Cook's explanation of this formula: Mass = Concentration X Flow, "... so that anytime the flow is increased, to keep the mass constant, the concentration must be increased." is faulty. The correct explanation is "... so that anytime the flow is increased, to keep the mass constant (should read 'to keep the concentration constant'), the concentration must be increased (should read 'the mass must be increased')." So, the correct use of the formula, Mass = Concentration X Flow, would read: to keep the concentration constant, the mass must be increased anytime the flow is increased.

Amazingly and ALARMINGLY, Mr. Cook's explanation of this formula/equation appears to have been misused to have the TOXICS CONCENTRATION be increased so radically and so harmfully against people and their environment. This situation also brings forth the subjects of experience-level, knowledge-background, intent and ethics of the participants in such an astonishingly basic "error". However, even the misuse of this formula/equation should not have produced 5,100 percent, 3,266 percent, nor even 2,020 percent increase in TOXICS CONCENTRATION when the total increase in domestic flow dilution of the toxics and the industrial flow of toxics are essentially equivalent at approximately one (one) time, or 100 percent, increase from present (1980) flows to estimated year 2000 flows of both domestic and industrial toxics/pollutants.

Again, amazingly and ALARMINGLY, "Cook noted that Eugene-Springfield metropolitan area is probably one of the first to use a logical approach to create limits and standards." What is logical in "... that anytime the flow is increased, to keep the mass constant, the concentration must be increased."? Logic requires knowing that the mass-constant requires DECREASING the concentration when flow is increased. People-of-letters should have learned this fact long before they became people-of-letters, which they may not be, or they may possess ulterior motives in having bypassed their probable knowledge.

This consideration appears to be probable when including more of the MWMC Newsletter's page 5: "Closer to home, controversy over the possibility of ground or (and) groundwater contamination by land application of sewage sludge has emphasized the need to keep sludge as free from toxic contamination as possible.

"The MWMC is developing a local industrial pretreatment program designed to protect the biological systems of the new regional treatment plant and maintain a toxic-free sludge through regulating industrial discharges to the public-owned sewer system." This TOXICS-FREE SLUDGE maintenance program has been reversed to the TOXICS=COMPOUNDING program. DRY THE SLUDGE, BURN THE SLUDGE, RECOVER THE TOXICS FROM THE SLUDGE. DO NOT PUT IT ON LAND WHERE IT CAN SO SEVERELY ENDANGER LIFE CONTINUITY VIA THE GROUNDWATER.

MWMC's Newsletter of August-September 1982 has on its page 5, "Industry accepts pretreatment program:

"Two representatives of local industrial firms testified in support of MWMC's industrial wastewater pretreatment program at a June 28 (1982) hearing, stating that they felt it was fair to industry. They were the only persons who testified at the meeting although eight other representatives from industry were present. The entire hearing was conducted within a 50-minute period, much to the surprise of MWMC staff present." Why would the MWMC be surprised that industry accepted a free-ride? The rule-of-thumb in establishing a functional balance is when both sides are still objecting to some features in the proposal being considered for adoption. Industy's acceptance of this "pretreatment" program does indicate the industry representatives received from MWMC a "cake" with multiple layers of "frosting". Christmas came early for industry.

Also, this August-September 1982 MWMC Newsletter's page 5 is continued with: "A member of the Commission's staff reported that in casual conversation following the hearing an industrial representative explained that since industries had been involved in the development of the program from the beginning, they understood and accepted the restrictions." What restrictions when MWMC's "reasonable guess", preferred by industry, has resulted in flow increase producing concentration increase to keep the mass of TOXICS constant? The MASS of TOXICS will INCREASE when CONCENTRATION is INCREASED, whether the flow is increased or flow remains constant - the Mass = Concentration X Flow formula or equation says this will occur. Compounding concentration of toxics, as has been presented as planned to occur via examining the portents disclosed by the bar graph, will compound the transport of TOXICS at any flow rate.

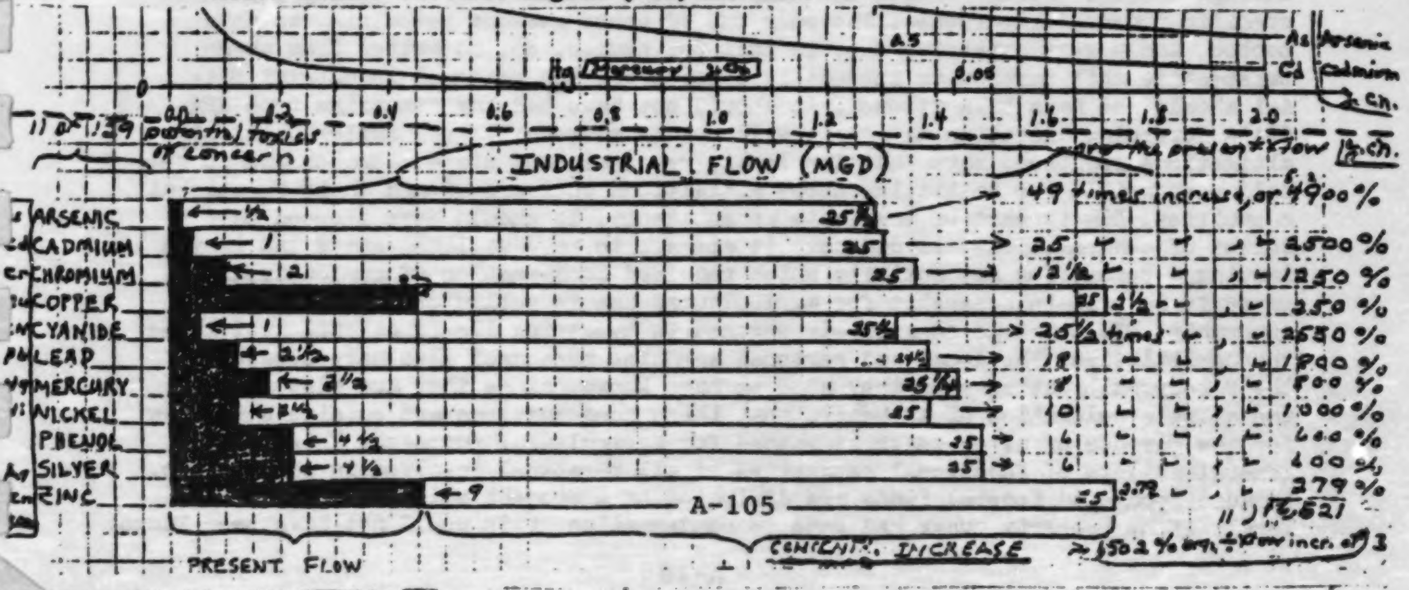
The inefficiencies or designs of the MWMC and its subcommittees majority members, in these particulars referring to industry's "pretreatment" of toxics, produces extensive questioning of the efficiencies and designs of the results in all components of this new activated sludge process plant since CH2M Hill reported that land application of sewage sludge is too expensive and should not be pursued further; now exclusively pursued.

Mr. Richard Thiel reported that no compensation for damages to the adversely affected people would be forthcoming. He was asked about the "zero industrial pollutants discharge to sewer lines by 1985". He responded that, although it is the result of legislation, it is a GOAL that is not to be achieved by 1985. It will certainly not ever be achieved when Mass = Concentration X Flow is so resoundingly mauled by promoters of industrial development - and hang-the-consequences.

Page 4 and 5 of this writer's input for the DEIS meeting on 12/6/83, not presented at that time, is attached to this series of comments on this DEIS. The conclusions are related to the perspectives presented on these eight pages.

John C. Neely, Jr. John C. Neely Jr. - 1600 Horn Lane, Eugene, OR 97404

P.S.: this bar graph copy is the one earlier presented to Ms. Ernesta Barnes by Mrs. Melva Barnes and Mrs. Eugene (Pat) Bohanan.



P S:

Page 6 of this EIS, Impacts of Individual Alternatives, has that "EPA will not be responsible for implementing all mitigations required. Local, regional, and state agencies will be called upon to initiate those mitigations that are within their functional capacities." Just reading this seems to allow this to be reasonable. However, once comparative concentration is applied to this attitude, applying this to so many inconsistencies discloses how so many illogical results have filtered-through-the-cracks.

1. Page 7 shows Table S-1 describing Alternative 2 (MWMC's Preferred Alternative), while page 11 shows Table S-2 describing Alternative 1 (Centrifuges abandoned, sludge stored in off-site FSLs(/secondary digesters) and air-dried, while Table S-3 shows Alternative 3 and page 15 shows Table S-4 describing Alternative 4. Considering general mental abilities to be as limited as they seem to be, the conclusion is that Table S-1 description could easily be confused with the Alternative 1 and the Table S-2 description could easily be confused with the Alternative 2, while no similar confusing factor is evident between Table S-3 description and Alternative 3, which also applies to Tabe S-4 and description for Alternative 4.

   The point being that this similarity was noticed in the new plant plans and their alternatives descriptions; when the description for one alternative was under consideration, it would be easy to associate this with the corresponding PLAN number. This appears to have occurred, because the upgrading of the two old, separate Eugene and Springfield trickling filter plants were said to be not-appreciably-less-in-cost than to build the single, regional-concept plant. The point being here is that this type of expression says that upgrading the two old plants would have been at less-cost. This implies that cost-effectiveness has been bypassed.
2. CH2M Hill's 1975 and 1977 studies provided definite information which was based on its experience-level, while Brown and Caldwell's studies appeared to offset much of CH2M hill's recommendations and directives. One of these, as an example, is that CH2M Hill said that land application of sewage sludge was too expensive and it should not be considered any further.

   Obviously, this expensive information has been bypassed. This EIS being a treatise on options for off-site land applications of sewage sludge are all which are being considered. This is not consistent with protecting the environment.
3. Page B-5 shows Table B-3's chart with Utilization/disposal options. This is for sewage sludge. The very similar conditions and mitigations are used on the Agripac site. This indicates that the deposits on that land will have properties similar to those in sewage sludge. And, the court decision pertaining to condemnation of property for Site A-1 did allow the condemnation for depositing sanitary sewage on-the-site-being-condemned. Yet, DEQ's permit has only seasonal industrial/cannery wastes to go on that property. Again, a part of law appears to have dropped-through-a-crack because Oregon law only allows condemnation of property for three specific reasons or purposes. The only one of these reasons pertaining to this booboo, and a very expensive one, is that for sewage. So, no matter from which perspective this particular subject is considered, the seasonal industrial Site A-1 should not have been allowed. It should not have had any financing from EPA. EPA's foregoing quotation, saying it will not be responsible for implementing all mitigations required, says that the local, regional, and state agencies are to be held responsible for initiating those mitigations that are within their functional capacities. DEQ is part of the state as an agency. It should have stopped this series of condemnations. It did not; it appears to have violated state law in the issuing a permit for any activity which required condemnation of agricultural use property in private ownership for agricultural use in public or quasi-public ownership. DEQ seems to be actively engaged in bypassing its functional activities responsibilities. The local and regional agencies personnel also have bypassed their responsibilities when they need to have known, since they are also part of the state's delegation of authoity, that these condemnations are outside state law for the purpose of using seasonal wastes for agricultural purposes. This is a general failure of functional capacities of all personnel involved in this fiasco, because local and federal funds are disipated on a project which has become not legal. If no property owner had gone to condemnation, this would not have been known.

The fact in this being known as a matter of court record has the EPA participating in violation of Oregon law. EPA's not being _ responsible for initiating this mitigating measure says that federal funds have been expended upon an illegal plot, plan, or project.
Pat (Mrs. Eugene) Bohanan has said that she spoke by telephone to Ms. Norma Young of EPA's Region X and that one of the particulars mentioned to Mrs. Bohanan is a rule or process used by the EPA on projects which is called engineering value or value engineering. Her understanding, and that of this writer, is that the word "value" has the direct connotation in ONLY price of a project is considered at that time. If this is so, then environmental considerations in protection are NOT considered. This could explain how the 10-inch dual force-main has been deleted from the "Agripac" plot, plan, or project, which deleted the three specific reasons which Mr. Burd had repeated as being required. The repeating of the requirements followed the first statement by approximately one year. This figures as the environmental factors give way to cost-effectiveness. Yet, this cannot be so, because the Site A-1 is being built when even the MWMC's literature said that Site A-1 was nearly $2,000,000 more to build and $35,000 per year more to operate and maintain than the overland flow option, which is also said in MWMC literature to be more environmentally acceptable.
This necessarily says that EPA and DEQ are involved with federal money waste, because neither cost-effectiveness nor environmental protection have been properly considered in this whole treatment plant and components series of projects, plans, or plots. Not sufficient supervision by state or federal agencies, or because of them, the local plotters or planners appear to have been - and still are - running-the-show-or-hide.

Since this whole sequence of events appears to have progressed to such a fiasco via the local and generally unreliable authorities and agencies - judging by the results to-date, the EPA should now consider exercising its potentials in making corrections by making sure that funding will only continue for the Alternative 3 and the use of the Judco Dryer and the O'Connor solid waste burner combination being installed ON THE NEW PLANT SITE. This would achieve the environmental protection which can still be attained. It should also be the cost-effectiveness solution, both with local and federal funds.

This EIS says that the EPA has performed the function for which an EIS is intended to demonstrate. It does demonstrate that the objections by the persons, ~~who are~~ involved in helping to cause this EIS to be performed, have been correct in their analyses of the worsening situation(s). This EIS also appears to remove EPA from any seeming-complicity in the down-hill-slide, away from cost-effectiveness and the environmental protection for which all of the involved funds were origionally expected to accomplish. Non-funding the Terry Street force-main beyond the pressure side of the West Irwin pump station and tied into the West Irwin existing force-main at that point would be an excellent means for acquiring the federal funds for the Alternative 3 continuation, with and for adding the combination of the O'Connor solid waste burner and the Judco Dryer, ON THE NEW PLANT SITE.

This arrangement would make the seasonal waste Site A-1 obsolete, because the old Eugene sewer plant could be used to process the cannery's wastes and the solids would be on-site to be processed through the Jud Buttner's Judco Dryer and O'Connor solid waste burner combination. The ash from this process in burning the seasonal wastes should be acceptable for the Bag-market as fertilizer. And, as soon as the new law becomes effective in 1985, to have ZERO INDUSTRIAL POLLUTANTS DISCHARGE TO THE SEWER, the sewage-burning-ash should also be acceptable for the Bag-market as fertilizer.

Other functions will be automatically corrected, if EPA does elect this route for future protection of our invironment. Getting the MWMC in the fertilizer business should be the most and last which should be expected from EPA. The most important item which can possibly come from EPA electing this suggestion as THE solution is in that, while the local authorities may deserve to have the pollutants come back to them in the food they eat, from the land upon which they had intended to spoil and waste with sewage pollutants, the public,which had no part in all of this having occurred to-date, will not be made to suffer illness or death as the result from the biases of the local agencies personnel, or their lack of expertise, or their complete lack of regard for their and others environment betterment.

John C. Neely, Jr. J.C.N.

Ms. Norma Young
EIS Coordinator
EPA Region X
1200 Sixth Avenue
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December 16, 1983

Re: M/S 443

At the meeting last night, before a county hearings officer for the Lane County Commissioners, MWMC requested a Conditional Use Permit for what it calls "Alternative 1", which is the original Site C area and designated as Alternative 2 in the DEIS. Its "Alternative 2" is the 125-acre site which adjoins Site C to the south of Site C, which is one of the sites designated as Alternative 1 in the DEIS.

The "experts" told the hearings officer the same line of - ah, state-of-the-art as was presented at the December 6, 1983 DEIS hearing. State-of-the-art, that which has caused Oregon to be at three times the national average hazard from waterborne diseases, is as an admission by those "experts" in not having included more recent references in their considerations which demonstrate the shortcomings within state-of-the-art as it is being practiced.

An objector to land application of the sewage sludge asked the rate of flow of the groundwater. The response was, again, 200 feet per year. Mr. Edwards, of Sweet-Edwards which made the reports on the 1978-1979 River Road/Santa Clara Groundwater Study, made this statement. He also said that, in the Dispersion and Decay analyses at the Shirley Street site, a down-gradient test well was pumped down to create a groundwater rate-of-flow acceleration of approximately ten times the normal rate of groundwater flow. This certainly does provide an admission in monkey-business with a supposedly scientific experiment to establish, as a phase, a groundwater flow rate. This adapting of such a test provides inexplicability in accounting for that study's specific reference to the participants SURPRISE in the injected bacteria having migrated up-gradient to an up-gradient test well. This may be indicative in the extensive deficiencies in the presently practiced by them state-of-the-art, and against which people utilizing the later references are so strenuously objecting. This D&D hanky-panky is not recalled as being in the report.

Their SURPRISE at this phenomenon of up-gradient travel of injected bacteria should have indicated to them that the direction and rate of groundwater flow is a combined functional relationship of the groundwater level, at the time of the testing, and the myriad interties in the sand-gravel channels of the aquifer, which were laid down so many years ago, and in reference to which they will have to continue to be required to just-guess, which is a sad reflection on their state-of-the-art and be an additional indictment against their use of that older and extensively deficient state-of-the-art.

Another local-resident objector said his experience-level has demonstrated that the clay soils in the area, that which is depended upon for a lining for the FSLs, is not impervious, but the clay soils are pervious to fluids. MWMC's literature and the DEIS confirm this action, albeit indirectly, when they have expounded on the sludge being a soil amendment which helps make the clay soils more and better workable in tilling. Page 3, last paragraph of this writer's input on 12/7/83, quotes from the Sludge Decomposition and Stabilization treatise by Roy Hartenstein, has that the fulvic and humic acids "... form water-soluble and water-insoluble complexes with metal ions and hydrous oxides and interact with clay minerals...", which is a substantiation in the soil-amendment perspective and is an accent on the validity of that local-area person's objections to the misuse of local clay soils as a liner for FSLs. The presence of the fulvic acids, and humic acids 70 percent similarities to fulvic acids also being present to act upon the pore perviousness of the local clay soils, which increases the speed of the reaction of the acids in the pores of the clay soils to make the pores of the clay soils larger and more rapidly to provide for the clay soils to become more pervious.

The "experts" appear to be providing in the sewage sludge the acids "moles" which would be chemically "boring larger holes" very rapidly in an "impervious liner" which is more pervious locally than the "experts" seem to include in their guesstimates. This was one of the conditions inferred in this writer's input in reference to Phase I at Short Mountain. Mr. Burd tried to reassure this writer in a response letter. He has totally failed in that effort. His effort may be considered as effective as the transcience of the dual-force-main requirement in the seasonal wastes transport pipeline to Site A-1, which became trancient as the result of value engineering - which also appears to have excluded all of the requirements for environmental protection, that for which the federal funding is intended to be expended; a major item which seems to have been acted upon as local clays are acted upon by fulvic acids 30 percent unstable ions.

Further reference to unstable ions: At the Coburg City Hall meeting by the Coburg residents, pertaining to this DEIS reintroducing the Coburg Hills site as an off-site sludge disposal alternative, one of the audience asked an MWMC employee, Mr. Peroutka, if air could be pumped to the plant site, a major source-area for acquiring the negative ion more nearly saturated air being from above the nearby Willamette River. His response was no. Does it reason to you, as it does to this writer, that pumping high negative ionized air to the heavy fluids of sewage and aerating those fluids at the plant site would have been more energy-efficient and environmentally protective than to instead expend funds for an off-site location and expending expensive energy to pump the heavy fluids to that off-site location for the same purpose in negative ion exchange from the air to reduce the putrescence of the "digested" sewage? The aeration energy cost is then expended to facilitate the ion exchange and reduce the putrescence of excess unstable ions to the stable ions characteristic in humified sewage sludge, and to reduce the numbers of birds attracted by such putrescence, which is indicated by so many references to odor in this DEIS.

Had the new plant been of the anaerobic design, the trapping and use of methane gas could have been utilized to drive negative ion generators which could have been located in the air transport pipelines from above the nearby river to the plant - a very short distance compared to the several miles of sludge transport pipelines to any off-site location to obtain the necessary negative ions exchange from the air at the off-site location(s). The negative ions are doing the job of reducing the amount of solids by changing molecular structures of the components in the sludge/sewage. The high positive ion excess from industrial pullutants, including solvents which also penetrate soils pores, including clay soils, more rapidly than does the capillary action of pure water, would reduce the amount of solids of sludge.

This DEIS, and repeated by the "experts" at last night's meeting, says that,when this new plant goes on-line, the solids production will be manyfold more than the two old plants produced. Logic requires considering that the two old plants had their separate sources of negative ions for exchange, while their sewage will soon be combined at one area and no increase in negative ions for the break-down of solids.; this fact must be included in any remarks which are intended to explain how the new plant will produce such an excess of solids. The connotation would include that polymerization has become the substitution for negative ionization at the plant site. The polymers being the means for "package" transport of solids molecules not broken down at the plant site because the limited air content of available negative ions has not been sufficient for the job of work required to reduce the solids to their simpler molecular structures which would be characteristic of humification.

The time required for nature to reduce putrescence to humus is said to be unknown, in the treatise on Sludge Decomposition and Stabilization. However, the proposition is becoming more often repeated that stabilization in warm climates would be approximately one and one-half years for domestic sewage. This Eugene-Springfield area must be allowed as being a colder climate, so the general reference is to double the time needed for domestic sewage to become stabilized. The presence of industrial pollutants may then be considered to be compounding the time for the domestic-industrial mix of sewage. This would reason to be a compounding of time to reach stabilization to be a nearly direct ratio to the amount of industrial pollutants in the domestic sludge dilution of those toxics.

An elderly lady, an owner of land in the area of Site C, presented the fact that she and her husband own land which is assessed at $52,000 per acre. If all of the land at the area preferred by MWMC is similarly priced and would have to be paid, together with the cost of the improvements on such land, the cost for the 170-acre site would be in excess of $8,840,000; the cost for the 125-acre site would be in excess of $6,500,000. This recalls that CH2M Hill said that land application of sewage sludge is too expensive, and it should not be further considered. CH2M Hill, as far back as 1975, reasons to be absolutely correct in its ignored recommendations. The Judco Dryer and O'Connor solid waste burner combination suely would have an installed and operational cost, even with duplication for back-up units, be considerably less than for just land costs for MWMC's biased from state-of-its-art preference.

John C. Neely, Jr.
John C. Neely, Jr.
1600 Horn Lane Eugene, Or 97404

HAROLD S. SCHRENK
LOIS J. SCHRENK
91736 Green Hill Road
Junction City, Oregon 97448

December 6, 1983

RECEIVED
DEC 9 1983
ENVIRONMENTAL EVALUATION BRANCH

E. P. A.
Norma Young
1200 6th Ave.
Seattle, Washington 98101

Re: E. I. S. Site C and Prairie Road Site

Dear Ms. Young:

Regretfully, we are unable to attend the meeting in Springfield, Ore as of this date re the hearing for the location of sludge dumping ponds for the Eugene Municipal system. However, we wish to use this means of registering with your agency our very deep concerns and objections to the above named sites.

We have a small (54 acres) farm just about three miles northwest of site C, and the Prairie Road site. We have lived here for thirtyeight years and developed our home and business where we are trying to make our living in these trying times of agriculture problems. These two sites will be placed over the direction of the ground water flow through our farm, as well as those of all our neighbors. All here in this area have shallow wells including the town of Junction City which is in the pathway of the underground water flow on which site C and Prairie Road are located. Our conerns are contamination of our wells and devaluation of our land and homes due to the sludge dumping on these sites. Assurances by the management of the Waste Water Committee that all precautions will be taken to prevent such contamination is not convincing the residents here this will not happen. The engineers reports and findings say that contamination is possible to our ground water from these sludge ponds. This would contaminate our living wells and drinking water for people and animals alike. Due to the cost of replacing the well and extensive water systems we now must have to operate our farm, replacement of such an extensive system would be financially impossible. There may be economic recovery for some segments of this country's business climate, but we in agriculture are not yet included in this warming trend. These sites chosen for the filth of the sludge of Eugene are all on cultivated agriculture land. The sites are also close to small communities of density population. The repugnant odors, the flies, the mosquito breeding facilities, the rodent problem--all will be paramount health problems for human and animal residents. The smell of field burning will seem like Channel #5 compared to what we will have to endure every day of the year from these acres of filthy sludge. There is not a knowledgeable individual who will allow this so-called "fertilizer" (sludge) to be dumped on his crop land to poison it for all time. The pathogens, hard metals, PCBs, put toxins into the soil to be taken up by plants and thus ingested into the human body and animals that graze the plants.. or eat the products thereof.

There are some questions we would like to have answered.

1. Is it not true the city of Eugene is trying to lure new clean industry to the area?
2. Would not many of these prospective investors be coming in by air via the Eugene airport?
3. Would not the airport be considered Eugene's front door for the

entrance of these visitors?

4. Why would Eugene want to put a cesspool in its front yard? These two proposed dumping sites are within seeing and smelling distance of the municipal airport. The choice of either of the above two sites at Eugene's front door, in our opinion, surely would raise some doubts as to the ability of decision makers in charge in our area. None of the points put forth by the Waste Water Managementgroup and their engineers have assured us that we do not have reason to be fearful of all the contamination afore mentioned. If this group is allowed to use this clean agriculture land for the contaminated sludge, the potential destruction it will deliver to the land, water and air is irrevocable.

It is our earnest hope, Ms. Young that you and your agency will please consider the fears and plight of all of those who live in the areas and pathways of site C and Prairie Road. Please do not let them have the land to build the sludge ponds on site C and Prairie Road.

Thank you very much.

Respectfully,

Harold S. Schrenk
Lois J. Schrenk

Harold S. and Lois J. Schrenk

[illegible]345

Chester Swenson
91004 Prairie Rd.
Junction City, Oregon
97448

December 6, 1983

Ms. Norma Young M/S 443
U.S. E.P.A. Region 10
1200 Sixth Ave.
Seattle, Wash. 98101

Dear Madame:

Concerning the E.I.S. for sludge disposal.

I am opposed to the use of Site C or any adjacent sites. I don't think any of our 160,000 acres of prime farm land in Lane County should be polluted by MWMC.

Why should Federal Funds (our money) be used for MWMC's sewer, sludge, and industrial waste projects? Is EPA going to fund a new septic tank for my home? What is the difference? If not, wouldn't that be discrimination?

Is a Federal balanced budget any concern of EPA?

Is the rest of E.I. statement as misleading as Pye's statement on page 165?

Yours truly,

Chester Swenson

Chester Swenson

RECEIVED

DEC 8 1983

ENVIRONMENTAL EVALUATION
BRANCH

Appendix B

Sludge Lagoon Liner Cost Estimate

Metropolitan
Wastewater
Management
Commission

COPY

COMMISSION MEMBERS
Christine Larson—Springfield Councilperson
Gerald Rust—Lane County Commissioner
Pat Hocken—Eugene Lay Representative
Betty Smith—Eugene Councilperson
Steve Allen—Springfield Lay Representative
Mark Westling—Eugene Lay Representative
Gary Wright—Lane County Lay Representative

225 NORTH 5TH ST. — SPRINGFIELD CITY HALL — SPRINGFIELD, OREGON 97477 TELEPHONE (503) 747-4551

February 21, 1984

Ms. Norma A. Young, Project Monitor
Environmental Evaluation Branch
U. S. Environmental Protection
Agency
1200 Sixth Avenue, M/S 443
Seattle, WA 98101

SUBJECT: SLUDGE LAGOON LINER COST ESTIMATE

As you verbally requested, enclosed is the order-of-magnitude cost estimate for lining the facultative sludge lagoons associated with the permanent sludge management system with the same type of liner as used in the Seasonal Industrial Wastewater holding lagoons. In using this information, please keep in mind that this cost estimate is based only on this one type of liner and that use of a liner of this type in this particular application may in fact be inappropriate. Other methods of sealing the lagoons may be better suited and/or less costly than this option.

The specification of a lagoon liner in the final lagoon design should be the result of a full scale engineering design effort and based on the performance requirements of the lagoon. This design effort would include investigation of several options for lagoon sealing, including possible use of native soil materials, importation of soil or clay sealant materials, use of various types of plastic liners, or other options.

Sincerely,

Al Peroutka

AL PEROUTKA
Civil Engineer

AP:be

Enclosure

cc: Dick Thiel, EPA
Mike Rushton, Jones & Stokes ✓
AP
BCS
DC

BROWN AND CALDWELL
CONSULTING ENGINEERS

D. H. CALDWELL, PE Chairman
T. V. LUTGE, PE President
E. F. MISCHE, PE Exec Vice Pres
D. P. NORRIS, PE Vice Pres

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FEB 6 1984
METRO
WASTEWATER

February 1, 1984

Metropolitan Wastewater
Management Commission
Suite 292
225 North Fifth Street
Springfield, Oregon 97477

13-112-82

Attention: Mr. William V. Pye

ESTIMATED COST OF PLASTIC LINER FOR SLUDGE LAGOONS

As you requested, I have prepared an order-of-magnitude cost estimate of a plastic liner for the sludge lagoons associated with the permanent sludge management system. The cost is based on the same type of liner used for the Agripac lagoons, and in fact, was derived using the unit costs associated with the Agripac project. Our estimate for the liner is $960,000, including engineering and contingencies, and is based on a Seattle Engineering News-Record (ENR) index of 4,800. As you know, this type of liner represents only one of a variety of methods for lining lagoons and is not necessarily the one we would consider best suited for the permanent sludge project.

BROWN AND CALDWELL

Steve Krugel

Steve Krugel
Project Manager

SJK:tab

BROWN AND CALDWELL
P.O. BOX 11680 EUGENE, OREGON 97440
2300 OAKMONT WAY SUITE 100 EUGENE, OREGON 97401 (503) 686-9915
ATLANTA DALLAS-FT. WORTH DENVER EUGENE PASADENA SACRAMENTO SEATTLE TUCSON WALNUT CREEK WESTWOOD

Appendix C

Final EIS Distribution List

METROPOLITAN WASTEWATER MANAGEMENT COMMISSION EIS DISTRIBUTION LIST

CONGRESSMEN

- Senator Mark Hatfield
- Senator Bob Packwood
- Representative Jim Weaver

FEDERAL AGENCIES

- Advisory Council on Historic Preservation
- U.S. Department of Agriculture
  - Soil Conservation Service
- U.S. Department of Commerce
  - National Marine Fisheries
- U.S. Department of Defense
  - Corps of Engineers, Portland District
- U.S. Department of Health and Human Services
- U.S. Department of Housing and Urban Development
- U.S. Department of Interior
  - Fish and Wildlife Service
  - U.S. Geological Survey
- U.S. Department of Transportation
  - Federal Aviation Administration

STATE AND LOCAL OFFICIALS AND AGENCIES

- Governor of Oregon
- Mayor of Eugene
- Mayor Springfield
- Mayor of Coburg
- Mayor of Junction City

- Oregon Department of Environmental Quality
- Oregon Land Conservation and Development Commission
- Oregon Department of Fish and Wildlife
- Oregon Department of Water Resources
- Oregon Health Planning and Development Agency
- Oregon Department of Transportation
- Oregon State Historic Preservation Office
- Oregon State Clearinghouse
- Lane Council of Governments
- Lane Regional Air Pollution Authority
- Lane County Health Department
- Metropolitan Wastewater Management Commission
- Eugene and Springfield Planning Departments
- Eugene and Springfield Public Works Departments
- Eugene Department of Planning and Community Development
- Coburg Chamber of Commerce
- Junction City Chamber of Commerce

LIBRARIES

- Eugene Public Library
- Springfield Public Library
- Junction City Public Library

A list of area residents receiving the Final EIS follows:

Area Residents

Paul Adams
Agripac
Claude Allen
Steven J. Allen
Mr. & Mrs. Allison
Arl Altman
Mr. & Mrs. Bud Andrews
Mr. & Mrs. Andrews
Mr. & Mrs. John Ankeny
Mr. & Mrs. Atkinson

Peter V. Baehr
Jerry & Nancy Balding
Melva Barnes
Gary Beck
Doral G. Bell
Ral Berfory
Glen Berkshire
Richard Beverly
Charles Y. Blaine
Steve & Debra Blexseth
Arnold Bodtker
Mrs. Eugene Bohanan
Bohemia, Inc.
Richard Borgmeier
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Mr. & Mrs. Darrell Bowes
Kerry Brough
Ms. Dee Brown
Tim A. Brush
Kathleen Bruton
Bob & Jackie Bryson
Jay & Mabel Bugbee
Jud Buttner

Orin Campbell
Edith Carr
Dennis Cartier
Cascade Fiber
Cascade Plating Co., Inc.
Joseph Cersovski
Mr. & Mrs. P. S. Chambers
Linda Christensen
Jere Christner
Ralph Cleveland
Chris Cogluth
Bob Coller
James L. Conner
William E. Connor
Doug Cook
William & Anita Cook
Steve Cooper
Christina Corelli
J. Covington
Clark W. Cox, Jr.
L. B. Crayton
Jim & Jan Cronk
Gary Cruzan
Ronald Curtright

Dairy Technology
Lynn & Jeffrey Davis
Ruth I. Davis
Eddie De La Vega
Ernie Dennis
Jeno De Piero
Mr. & Mrs. Detato
Donald C. Dickey
Carl Dipaolo
George M. Dipprey
Betty Donaldson
Robert Dooley

Gerald Edwards
D. W. Eisele
Gordon Elliott
Mr. & Mrs. Thomas Ellis
Joyce Engels
Emmet Engeman
Dianna M. Ersinger
Esther R. Everson

Melody Faber
C. C. Fairbanks
Michael E. Farthing
Mr. & Mrs. Robert Farver
Eric Fischer
Mrs. Lyman Fisk
Jack Flint
Jeanette Flynn
I. Forneel
Mr. & Mrs. Herbert Fortner
Faye Foster
Everett Fox
Marlin & Shirley Franssen
Vance Freeman

F. E. Gallaher
Ernest J. Garrett
Howard Gay

William Gilliam
Earl Gingerich
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Terry C. Gould
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Gerald Grimes
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Mr. & Mrs. K. G. Hagdahl
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Ray Harrison
H. Harrold
Geneva Harwood
Rhonda Harwood
Jon Haterius
Tom & Vora Heintz
Lynn & Ron Heitz
L. Hellwege
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